The Builder.

No. CXC.

SATURDAY, SEPTEMBER 26, 1846.

ONE more blow, "for St. George and merry England," if it be only to prevent, if possible, our foreign friends from being merry at the *expense* of England.

Public opinion against the proposed site for the colossal Wellington grows stronger every day. Since the question came clearly before the public, we have purposely taken the opinion of some hundreds of persons of all classes, chiefly when passing the spot, and assert unhesitatingly, that we have never met *one* person prepared to defend the intention of the committee, or disposed to believe that the result will be any thing but unsatisfactory. There is not one journal, so far as we know, that advocates, or even excuses it; the architect of the arch first trembles, and then denounces it; the last government opposed it, ("the opinion of every eminent architect, artist, or other competent authority, who had been consulted on the subject, being so decidedly against it"*); the present government offered another site, and would gladly defray all the expenses incurred to facilitate the alteration; and the artist, Mr. Wyatt, as we have good reason to believe, would prefer to have it placed somewhere nearer to the ground. And yet, despite this universal objection, the committee, or rather the two or three gentlemen who represent the committee, persist in their determination, and succeed by means inexplicable and in defiance of a promise, to the House of Commons, that the works should not go on until the opinion of the House had been taken) in obtaining permission to outrage the national taste. We grieve to find Sir Frederick Trench, so right in another case, so wrong in this.

The public have room to blame those on whom they are accustomed to rely for information and guidance in matters of taste, and to regret, that fear of responsibility, and unwillingness to interfere, prevented some whose opinion would have been listened to and ought to have been expressed, from speaking until, perhaps, it is too late.

In 1839, long before THE BUILDER was established, we addressed the following remark, and others, under the signature of "Stimulator," to the *Art-Union Journal*:—

"At the close of July, a meeting of the general committee appointed to arrange this memorial was held, and it was then mentioned as a matter settled—but to our exceedingly great surprise—that the statue was to be placed *on the arch at Hyde-park Corner*. Surely the committee cannot be in earnest, or cannot have given the subject sufficient consideration. We had thought that the monstrous effigy which was erected some months ago in this situation, to the infinite terror of young horses and neighbouring crows, had served fully to convince the committee of its unfitness. We know very well that this caricature (nailed together in the morning, and painted by Henning in the afternoon of the same day) was not to be taken as a representation of the proposed statue. Apollo forbid that it should be so! Still it was quite sufficient to prove, even to the capacity *which requires so palpable an argument*, that a triumphal arch complete in itself, and demanding admiration of itself, is not a proper pedestal for a commemorative figure. It is quite certain either that the statue must be so large and important as to render the arch secondary and insignificant, or that the statue will become a mere ornamental accessory, the special purpose of which will speedily be forgotten.

Our excellent contemporary, the *Literary Gazette*, quotes, in approval of the proposed situation, a conversation which took place between Mr. D. Burton, the architect, and Mr. Wyatt, the sculptor, long before the Wellington tribute was suggested; wherein Mr. Burton held that the addition of a figure, or group of figures, was essential to the beauty and finish of his erection. No doubt he thought so—no doubt he thinks so still; but we will venture to say he cannot possibly desire that this figure should be so dominant as to degrade the arch to a mere pedestal, which certainly will be the case if a statue of Wellington, sufficiently large to retain its individuality, be placed thereon."

Our remonstrance, however, awoke no sufficient response,—the evil was distant, and the public mind was occupied.

The model was removed, the sculptor went to work, and the question, so far as the site was concerned, went to sleep. In July, last year, when the arrangements for strengthening the arch were quietly under discussion, we protested in our own columns against the unwise determination,* and it was only then that our contemporaries, simply reiterating our arguments, really entered the arena, and unanimously objected to the proposal.

And where during all this time have been our Academy? where our Institute? where our responsible professors of fine-art in the metropolis?

Not at the eleventh hour, but as twelve is striking, lo! one of the latter has taken courage, and speaks. Speaks well too; says better, all that we have said, and more,—but still shews some fear of imputations by signing himself simply C. R. C.

How much good is postponed because men fear wrong motives may be imputed to them, or shrink from responsibility. This, however, is in a parenthesis. C. R. C., in a letter to *The Times* (published on Tuesday last), begs leave to add "one more voice to the outcry already so justly raised against the erection of the statue of the Duke of Wellington over the arch at Hyde-park Corner," saying:—"Indeed, as one of the responsible professors of fine art in the metropolis, I feel myself called upon to offer some arguments against this solecism in art, so seriously involving the honour of the country, remembering always that 'England expects every man to do his duty,' no less in every civil than in every military capacity."

We would that this duty had been felt long ago. Still we are thankful for the compliance with it even now, and although the insertion of the whole of the communication would trench too much into our space, we are led to reprint the greater part of it, as confirmatory of our own remarks from first to last, and to preserve in our pages the protest of at least *one* of "the responsible professors of fine art in the metropolis,"—the more so too, as it is that of the accomplished professor of architecture in the Royal Academy.

"The solecism," says Professor Cockerell, "consists in the proposition to place a statue of colossal dimensions as an ornament to a triumphal arch of disproportionate magnitude, so that the ornament and the principal are in danger of changing places, and the major may become the subordinate to the minor. And again, in proposing to place that ornament on an axis at right angles with that of the arch itself.

In a question of this nature we naturally turn to classical examples, and the various experiments made by the Romans in this kind of monument; of which the work of Bellori on the triumphal arches of Rome will afford full, explicit, and satisfactory illustrations; he restores the actual remains of them, in all their architectural details, and decorates them with their essential ornaments of quadrigæ, trophies, and equestrian statues, by the aid of contemporary medals—twelve examples of which, from the period of Augustus to that of Trajan, he gives us in his last plate.

In so doing he has been careful to correct the exaggeration in the relative scale of those ornaments, to the architecture of which the medalist, under the conditions of his art, was unavoidably guilty; for had the medalist refrained from this license in the minute dimensions of his work, the nature and meaning of those ornaments would have been scarcely discernible. We should, therefore, be lamentably misled were we, unaccompanied with this reflection, to draw from these medals an argument in favour of the relative proportion of the sculpture and architecture as proposed at Hyde-park Corner.

It is not, of course, proposed to sacrifice the architecture to the statue; on the contrary, it is presumed by the zealous propounders of this measure to enhance the value of both, by their fitness and correlation. All are ready to admit that the harmonious union of sculpture with architecture, constitutes the great secret of proportion and the glory of a monument; but all are not equally aware, that in adjusting the parts to the whole by the co-operation of these arts, we are to be guided by rules scarcely less delicate, and at the same time determinate, than those which regulate the proportions of the 'human form divine' itself.

Amongst the ancients, certain fixed laws and analogies were absolutely established on this subject, and may be plainly traced in their best works: one of the most obvious of which was, that the dignity of the architecture was never to be impaired by the sculpture, or overlaid by the nature or dimensions of the figure; to this end, the bulk of the latter was never to exceed the diameter of the column, nor was the sufficiency either of the supports, the entablature, or the arch to carry the encumbent weight, ever to be doubted. All soffites and underparts, usually concealed by nature, were carefully to be avoided; the *sotto in su*, often so destructive of contour and form, as seen in their natural positions (of the horse especially), were to be used with peculiar reserve and discretion. A multitude of minor considerations and rules of art, too long to cite in this place, regulated these operations at all times; and wo to those who respect them not, and who dispute the consentaneous convictions of experiments, repeated with so much uniformity, through so many successive ages and fashions of opinion."

The professor then goes on to shew that when the colossal *was* employed by the ancients, the magnitude was rendered unquestionable by position and arrangement; whereas in the present case although manifestly disproportioned to the arch, the size of the figure at such an elevation will be unappreciated, from the absence of fitting objects of comparison.

If the committee had condescended to seek the advice of professional men, he says, they would have been spared disgrace, and the public trouble.

The professor continues:—

"If any thing could have shaken their infatuation, the model put up experimentally in 1838 would have done so; but with determined blindness they shut their eyes to the conviction it brought on all discriminating beholders; the preposterous impression made by that model, 21 feet high, can never be forgotten by any one who sustained the shock of the spectacle. What then, Sir, will it be when the colossus itself will be found to be 30 feet high?"

Further, this model had no *bulk*, consisting simply of flat boards!

"But if the authority of the medals as respects the relative scale of the figures to the architecture is to be distrusted for the reason assigned, much more is that for the placing the statue at right angles with the axis of the arch; or, in other words, in contrasting the profile view of a statue with the front view of

* Lord Canning's remonstrance to Duke of Rutland.

* See Vol. III., p. 325, and pp. 241, 253, 361, &c., in present volume.

an arch. Amongst the twelve medals cited by Bellori, two dedicated to Drusus, and one to Claudius, represent equestrian statues in the position proposed, with trophies before and behind them, and surmounting the sides of the arch; for be it remembered, by the way, that these ornaments as applied to the square outline of the architecture are in the medals invariably threefold; an essential condition of the design as a whole, and a grave omission of the learned Thebans of the sub-committee.

These examples have been quoted by them as authority, but a little explanation will shew that they are inapplicable to the case. These three examples were probably mere screens, like that at Wilton, and not deep enough, therefore, to receive the statue placed in the usual and proper manner. Another still more probable reason is suggested by the nature of the medallic art itself, which permitted the same poetical license in this case as in the others already quoted. The artist, in order to express intelligibly the single equestrian statue, places it in profile; for, had it been foreshortened, and in the front view, it might have been mistaken for a dismounted man or a trophy. In the happier periods of art exhibited in the other medals under Augustus and Trajan, and when their counsellors, Vitruvius and Apollodorus, were respected by those wise patrons, even that license was not permitted (see the nine other medals), and the artist was constrained to the representation of the fact as best he could.

The horse and rider, presenting their front to the spectator who approaches laterally from Piccadilly, will appear in most strange contrariety with the front of the arch, which presents itself at right angles to this point of view, and towards the park. The aspect of the whole should have been unity, as the head and the body; but the proposed derangement will resemble the caprice of the sculptor who should permanently fix the head of his figure looking over one of the shoulders, so that while the body faced the spectator, the head looked another way, and *vice versâ;* a liberty quite inadmissible in the gravity of monumental art. As well might the architect adopt the anomalous order of architecture represented on these medals, as the unusual position of the equestrian figure surmounting the arches of Drusus and Claudius.*

The zeal of the committee can never be doubted, but it has been without knowledge; they have deeply felt the responsibility and the greatness of the occasion, but their common sense has been overwhelmed by it; a volume of reports amply attest the fact. On this great work of art every opinion has been heard, discussed, and given, but that of artists!"

The Duke himself, Mr. Cockerell considers, has never directly sanctioned the adoption of this locality, and when appealed to has said, "On this point I am a dead man."

"Whenever the noble Duke has taken an active part in similar monuments, as in the Duke of York's column and that of Nelson, he has been remarkable (as indeed in every other business of his life) for consulting professional authority; '*Cuique in sua arte credendum est*' has ever been his motto. How different has been the method of this sub-committee!—a tumid correspondence amongst the officials has been published without even a distant reference to such an essential preliminary; the distinguished artist himself (and it is much to be lamented) has not given his opinion, nor apparently has his opinion been asked or quoted; Mr. Burton alone, with a manly regard to his art and his own beautiful work, has, unasked, most solemnly and distinctly protested against it, with plain and unanswerable reasons for so doing, in his letter. Lord Monteagle, Lord Lincoln, and Lord Canning (officially), Sir Robert Peel, and other distinguished persons, have, as occasion has offered, opposed this sub-committee. The artists, the journals, the good sense of the country, have denounced it; and great and universal was the satisfaction, when in June last a motion in the house, and a promise from Lord Morpeth, seemed to have relieved us from this disgrace; when, hardly to our surprise, the committee, returning to the charge, have so far carried their point, that, as it is said, it is to be exhibited for three weeks *in situ*, as another experiment: the termination of those three weeks may be postponed *sine die*. The committee have shrewdly foreseen that the novelty, the audacity of the spectacle will, at all events, be a nine days' wonder; and possibly attract the admiration and golden opinions of the mob."

We have no fear of this; what we do fear is, that the same influence, or supposed right possessed, by which the committee are enabled, in spite of the promise to the House of Commons, to hoist up the figure "on liking," (the most puerile act in the whole of these unwise proceedings), will enable them to keep it there, when up, without any 'golden opinions,' and in spite of all objectors. The expense of reconstructing the scaffold—for the greater part of it will of course be taken down to let the statue be seen,—and the great difficulty of lowering the group, will likewise further their views.

The professor concludes his letter with an assertion of his belief, that the people of this country who feel that, however great in other respects, they have no reputation to spare on the score of art, will not subject a work, of which they will ever be jealous, to the finger of scorn; and that they will yet shew in a more determined form than has been exhibited, their objection to the proceeding.

We sincerely hope this will be the case; but then it should be done immediately: not to-morrow, but to-day. The effect of the pedestal alone upon the arch may even now be seen, and must make Mr. Burton fear more strongly than before, that if the statue *be* placed there, a proposition will soon be made for removing altogether the façades of columns, as their "slender proportions will appear incongruous and out of proportion compared with the prodigious dimensions of the statue." Let a meeting of the subscribers be called forthwith, and we may yet escape a great and lasting reproach.

* One of several correspondents on the subject says, in respect of this particular objection,—"Why, the tout-ensemble will have two fronts! Has any thing in nature two fronts? As well might the crest on a helmet be put on sideways; as well might the duke be made to sit on one side of the horse, in the fashion of a brewer's drayman, as place him in the manner intended. If it cannot be adjusted properly, it has no business on the site chosen at all. If your hat wont fit my head the right way, I shall look a comical figure by wearing it sideways. The duke will look, not as if he had mounted an honourable eminence, and in that position presented his proud front to all comers, but rather, as if he had been elevated into an unmerited position of distinction, and so, like a modest man, was meditating a cap on one side or the other to escape from it."

ANNOTATIONS ON IRON.

Iron is the most useful of all metals; it enters into every branch of the arts of civilization, and there are few departments of science in which its presence is not necessary. When we contemplate such articles as the plough, the anchor, the lancet, and the watch spring, we are forcibly impressed with the wondrous resources it affords, and with its inestimable value. "Were the use of iron lost among us," says Locke, "we should in a few ages be unavoidably reduced to the wants and ignorance of the ancient savage Americans:" yet is this valuable metal, which is so essential to our wants, derived from very ungainly materials, and requires, more than any other, the exercise of human ingenuity. In Britain it contributes largely to the national prosperity, and may be said to constitute the basis of its staple manufactures. The methods of its manufacture, from ore into pig-iron, and from the latter into wrought, are so well known as not to require any description here,—the object of the following paragraphs being simply the collation of some leading data of practical utility, to which the growing use of this material for constructive purposes imparts increasing importance.

Pig-iron may be divided into six sorts or qualities; viz.:—Foundry iron, Nos. 1 and 2, dark gray iron, bright iron, mottled iron, and white iron. The first is so soft as to yield to the chisel, is very fluid when melted, and will fill the most delicate moulds; it is therefore used for small, ornamental, and superior work, where accuracy and nicety are wanted: this iron contains much carbon. The second is harder, closer in the grain, less fluid when melted, and suitable for a heavier description of work: it contains less carbon than the preceding. The third, containing still less of foreign matter, is suitable either for the foundry, or for the manufacture of malleable iron; for castings, it is calculated for heavy work, where great strength and durability are essential. Respecting the fourth, fifth, and sixth, it need only be remarked, that the more they depart from the properties of the foundry iron, the less they are capable of being employed for castings, and are, consequently, the more confined to the manufacture of wrought-iron. The last, containing the least carbon of all, is totally unfit for the foundry, being so thick when it comes from the blast-furnace, that it will scarcely run into the pig-moulds; when cold, it is so hard that the chisel will make no impression on it, and so brittle that the largest pigs may be broken with the blow of a sledge-hammer; it can neither be filed, bored, nor bent, and is very apt to break when suddenly heated or cooled. Those qualities, then, which approach the nearest to the grey, should be esteemed the best for constructive castings.

Hot-blast pig-iron is generally understood to be inferior in quality to cold-blast, which, indeed, seems sufficiently implied by its inferior price; the latter has been referred to,—1st, the known inferiority of hot-blast iron under *impact*, rendering it unfit for purposes in which the greatest weight of iron is used; 2ndly, the greater loss (amounting to 2 cwt. per ton) which takes place in re-melting it; 3rdly, the great irregularity in the contraction of castings when cooling, on which account many of different sizes are produced from the same pattern, causing great expense in their after-fitting, or, if that is not incurred, great defect in the machinery, &c. so made; 4thly, its unsoundness, which, when the casting requires to be turned, bored, or planed, &c., causes defects so considerable to show themselves, probably when nearly finished, that both the casting and the expense bestowed upon it are thrown away. This decided inferiority has led to a stipulation, now common with engineers, when specifying for bridges and other similarly important works—that no hot-blast iron shall be used therein, and that the ironmaster's invoice shall be forthcoming, if required.

For beams, and other bearing purposes, cast-iron, possessing a considerable degree of malleability, is to be recommended, since that property lessens the risk of sudden failure; and, as a general rule, that is to be esteemed the best for all purposes where strength is required, which sustains the greatest degree of flexure without taking a permanent set; and also, of course, which supports the greatest load. The most flexible iron is sufficiently stiff, and it is the worst and most brittle which has the greatest degree of stiffness.

Gray cast-iron, being soft and tough, is least liable to fracture by a blow or shock, is slightly malleable in its cold state, and when the external crust is removed, yields easily to the file. Its recent fracture is gray, with some metallic lustre, and granulated, the lustre appearing to be produced by minute particles of fresh-cut lead, distributed more or less thickly over the surface; if the iron is very tough, the dark gray colour is uniform, the texture fibrous, and the metallic lustre abundant; if less tough, while the colour is the same, the lustre is deficient, and the metal, though soft, is more crumbling, and will break with less force; in the weakest of the soft kinds, the colour is mottled with black-grey specks, and without lustre.

White cast-iron, being very brittle, should not be chosen for purposes wherein strength is necessary; but being very hard, it may be usefully employed where hardness is a desideratum, and brittleness is not a defect. When cast smooth, it makes excellent bearings for gudgeons or pivots to work in, being very durable, having very little friction. Its fracture indicates a crystalline structure, having, when recent, a white and radiated appearance, the lustre apparently proceeding from the facets of crystals disposed in rays; when the iron is grayish white and with much crystalline lustre, it belongs to the extreme degrees of hardness; when of a dull white, it is also very hard and brittle; when of a light colour, and possessing some little metallic lustre, it is the

same in a less degree; but when abounding in the latter particular and of a light gray colour, it is besides hard, in a considerable measure tenacious: such iron is always very stiff.

Thus by the two characteristics, colour and lustre, in specimens recently fractured, some judgment may be formed of the properties of cast-iron. In whole castings, the best test of their quality is to strike them on the edges with a hammer; if the blow produce some slight impression in the metal, indicating a degree of malleability, it is tough and good—that is, supposing it to be uniform; if, on the other hand, no sensible indentation takes place, but small fragments fly off, it is brittle and unsuitable. If in those planes which should have been perfectly true, the casting presents an unevenness of surface, it indicates an ununiform texture, produced by the admixture of metals of different qualities, which, having different degrees of shrinkage, produce an inequality of strength and tension in the compound that impair the casting and render it liable to sudden failure. For this reason, the utmost care should be observed to render the metal in each casting perfectly uniform throughout; for in the endeavour to produce an iron of a particular quality by mixing together different kinds, it is found difficult to blend them so thoroughly, as to render the compound metal perfectly homogeneous.

Any material defect in a casting, which is not apparent on inspection, may often be discovered by the sound which it emits when struck, unless it consist in internal air bubbles, which are not discoverable by this means; great care should be taken to prevent defects of this kind, and the more time that can be allowed for castings to cool, the better, the iron being tougher when cooled slowly than rapidly, and deriving much the same advantage from it as it would from the annealing process, the object of which is, by retarding the progress to the solid state, to afford the particles more facility for adjusting themselves, and thus to equalize, if not neutralize, the tension produced by the shrinkage in cooling. This is the more necessary when the parts of castings are of unequal thickness; for when the cooling in such cases is rapid and unequal, their solidity is liable to be impaired; and if the difference in their parts is considerable, they are likely to be fractured in the thin parts from the unequal shrinkage; for this reason, it is a common rule to make all the parts of a casting as nearly of the same thickness as possible, that the cooling may proceed everywhere at the same rate.

Appearing, as it does, that castings, in every respect satisfactory to all outward semblance, are yet liable to contain air-bubbles internally, and which cannot be detected by sounding, it follows imperatively, that beams which have to sustain great weights, should be proved under a trial-pressure before they are used.

Cast-iron resists fracture from crushing with nearly seven times the power which it does that from drawing asunder; therefore, supposing the neutral line between the part of a beam which is in a state of compression and that which is in a state of tension to be in the middle of its depth, the lower and upper flanges should be unequal in the proportion of nearly 7 to 1; or, these are the proportions of strength which should subsist between the parts below and above the neutral line, however disposed.

In the late experiments for determining the best sectional form for the tubular bridge across the Menai straits, this imporant fact was brought to light, that in wrought-iron the relative resistance to tension and compression is in the inverse order of that which holds with respect to cast-iron,—it being found necessary, in experimenting on rectangular tubing (the approved form of section) to make the upper side considerably thicker than the under one, in order to obtain an approximate coincidence in their breaking points: the exact relation which these powers bear to each other has not, we believe, been yet ascertained.

The strength of a beam is not in proportion to the quantity of material—power being obtained rather by the proper disposition of the component parts; and the strongest form is found to be attained by the relation that subsists among the parts of a section consisting of a vertical web, with a flange on its upper and lower edges.

A beam loaded beyond a certain limit continually *yields* to the load, but with an exceedingly slow progression, unless the load very nearly approaches the breaking weight; and though cast-iron may be loaded considerably beyond what has generally been deemed prudent, the beam may be advancing, by however slow degrees, to ultimate destruction.

A load, though uniformly distributed, does not press equally, but increases with the distance from the points of support; therefore, the magnitude of a beam should be increased in like manner. The form of equal strength for a load equally diffused is a semi-ellipse, with the curve at the top; for a load applied in the middle, two equal semi-parabolas placed base to base, with the curves also at the top; and for a load between the middle and one end, two semi-parabolas in like manner, but unequal, their bases meeting in the point of greatest strain. But as, mathematically, these forms occupy, in their lengths, only the extent between the points of support, an extension and spread at the ends is necessary, to afford proper bearings; such being the case, it is obvious that, in lieu of the ellipses—segments of circles, and in lieu of the parabolas—two straight lines meeting in an obtuse angle, are the best forms to be adopted in practice. When circumstances do not admit of a beam being increased in the depth, it should be increased in the breadth instead, according to the various cases above stated, both sides being made alike.

Care should be taken to avoid making any reduction of strength in the lower half of a beam; if bolt-holes in it happen to be unavoidable, there should not be one under the point immediately loaded, and they should be surrounded on each side with a rim fully compensating for the portion abstracted and the continuity of tie interrupted; in the upper half the circumstances are so different, that a series of cross cuts down nearly to the centre have been made in a timber beam and filled with plates of sheet metal for the purpose of stiffening it; perforations for the purpose of lightening a beam are inadmissible in the lower half, but in the upper may be effective of advantage. An extreme of depth in this material is to be avoided, for notwithstanding that much saving is effected by making a beam thin and deep, an excess in this respect renders it rigid, and though calculated to sustain an immense pressure, liable to fracture from a comparatively small impulsive force. Patterns should be slightly bevelled for the purpose of facilitating their removal from the sand without injuring the mould; an allowance should also be made for the contraction of the metal in cooling; the bevel may be about one-eighth of an inch in the foot, the allowance for contraction similar.

Our knowledge of the power of cast-iron columns to resist fracture by direct downward pressure is very limited; indeed so few and vague are our data for determining their proportions, that they seem to be limited to our actual experience; so long, however, as the load is not of an extraordinary nature, and we pay any observance to symmetry, there seems little risk of our reducing their thickness so as to endanger their stability—if we may judge by the story-posts used in the shop fronts of London, which, as Tredgold remarks, are sometimes made so small in respect to their height and the load upon them, that a very slight lateral stroke would break them. But the valuable experiments of Mr. Hodgkinson tend greatly to establish sound practical formulæ on the subject, and indeed have already made considerable progress in doing so; he has found—

That there is a certain proportion of height to diameter, beyond which it would be dangerous to go—the resistance rapidly lessening with the increase of height;

That the relative strength of three pillars, in every respect alike, excepting that the first has both ends flat, the second one end flat and one rounded, and the third both ends rounded, so that the force passes through its axis, is as the numbers 3, 2, and 1;

That a uniform pillar, with its ends firmly fixed, has the same power to resist breaking, as a pillar of the same diameter and half the length, with the ends rounded;

Also, that some additional strength is given to a pillar by enlarging its diameter in the middle;

Long columns give way first at the ends, showing those parts to be the weakest; the inference therefore is, that an increase of sectional area there would be attended with advantage.

PALACES ABROAD AND AT HOME.

Sir,—The editorial writers in the public papers are supposed to be well informed, as they ought to be, on the subject on which they profess to enlighten their readers. It was with no small surprize, however, that I read "a leader" in a Conservative weekly paper of high respectability, of Saturday, the 5th inst., commenting on the proposition which the public mind seems disposed to adopt, viz., the recommendation that a new palace should be built for the sovereign of England, instead of expending money upon Buckingham Palace. The writer in question seems to think that there are already palaces enough, but before enumerating those of the English sovereign, proceeds to mention the royal residences of the king of the French, viz., the "Tuilleries," "a country house at Neuilly," "and he now and then visits St. Cloud;" and "Versailles has a huge palace, but there the king never resides, it is the palace of the people;" thus limiting the number to four; but it would have been more candid in the writer to have added to the list the memorable palace of Fontainbleau, with its magnificent forest of 40,000 acres, and the royal châteaux at Pau, and Eu, making up the number to seven.

The writer then mentions the royal residences in England, viz., Windsor Castle, Hampton Court Palace, Kew Palace, Kensington Palace, the Pavilion at Brighton, Osborne House, and Claremont House, and adds, "Thus her Majesty has at her command no less than seven palaces, all within an easy distance of London, with the palace in Pimlico for her residence, and St. James's for her levées and drawing-rooms. Whether those are enough is more than we can venture to say, but that they are about three times (more?) belonging to any other crowned head in Europe."

The list of "seven palaces," will, however like Falstaff's "seven men in buckram suits," bear reduction, and clearly I have a right to apply to the English the same line of argument which the writer has used for the French royal palaces. But first, I quite agree with the writer in the opinion expressed of Windsor Castle, that it is "beyond all comparison the most stately residence in Europe;"—for Hampton Court I claim the argument used in speaking of Versailles, to say, "there the Queen never resides, it is a palace of the people" ("I thank thee for teaching me that word"), and the tens of thousands of persons who annually visit that noble place feel an almost prescriptive right to its enjoyment, to the exclusion of "king or kaiser" residing there. Next, Kew Palace has never been "resided in" by her Majesty, and it is too small for any but a branch of the royal family; and although the Gothic palace built at Kew by King George III., cost half a million of money, it was considered (and justly so) the best economy to pull down the fabric, as tasteless as it was expensive. Kensington Palace, since the time of George II., who died there, has not been used as the residence of a reigning monarch. The "Pavilion" at Brighton is doomed to destruction. Her Majesty will never again set foot within that costly gewgaw.* Osborne House is, I believe, her Majesty's private property, and of Claremont the writer in question says, "purchased with public property, it is at her Majesty's disposal, though for the time settled on the King of Belgium." The latter part of this sentence appears to contradict the other.

Thus the "seven palaces at her Majesty's command" dwindle down, so far as actual occupation by the head of this great nation, to a princely country residence, a comfortable seaside villa, and an inconvenient town mansion, not more in number than the allowance of almost every private gentleman of fortune; and instead of being more than belongs to "any other crowned head," it might easily be shown, as in the case of the French monarch, that it is less than falls to the share of European

* The riding-school and stables belonging to the Pavilion are really fine things in their way. If they could be spared, they would be ornaments to the town, and might be made useful.

sovereigns. I believe that I am perfectly correct in saying, that the brother of his Royal Highness Prince Albert, the reigning Duke of Saxe-Gotha, has ten, if not twelve, noble palaces in his duchy, many of which were visited by Queen Victoria, during her tour on the continent; whilst it would be easy to name some of our nobility who possess, each, six and eight princely mansions; and leaving Windsor Castle out of the question, no royal residence in this country can vie in splendour or extent with Blenheim, Chatsworth, Castle-Howard, or Dalkeith.

If a vote in Parliament authorizing the expenditure of money on Buckingham Palace had not taken place, it is probable that no discussion would have arisen, for the present at least, respecting the removal of the royal residence; for her Majesty, with her characteristic disregard of personal convenience, and that consideration always displayed towards her subjects, would be the last to express a wish for the change of residence, if it involved a great sacrifice on the part of her people.

But the question now is, whether her Majesty is to be worse lodged than many of her subjects, and to be obliged to continue, at the risk of health, in an acknowledged inconvenient building,

"Cabin'd, cribb'd, confin'd,"

when a word from a generous nation would give to their Queen an opportunity of possessing at least as much comfort as at the command of her nobles; and it should always be borne in mind, and it is an important fact, lost sight of by some writers and distorted by others, that by the recent arrangements respecting the management of the Crown lands, the English nation has been a gainer to the amount of several MILLIONS, in the generous surrender of all their hereditary possessions by the sovereigns of this country. Shall it then be said that England cannot afford, or that she will grudge, to build a palace worthy of herself, of her age, and of her Queen? But no great sacrifice is required; for by the scheme which has been submitted to the public, it will be seen that the funds necessary for the accomplishment of this purpose may be looked upon as provided, by not being expended on objects beyond the reach of cure. Having occupied your space thus far, I propose to resume the subject hereafter, and remain, &c.

GEORGE RUSSELL FRENCH.

Sept. 18, 1846.

AWARDS OF OFFICIAL REFEREES.

PROJECTING EAVES.

MESSRS. KING of Islington, having formed the eaves and cornice of a certain dwelling-house in Canonbury-park, of wood, the district surveyor, Mr. Edwards, lodged the ordinary information. The house is one of a series of detached houses, each 15 feet from the wall which separates the gardens.

Mr. Perkins, on the part of the builders, stated "that he considered that the said building was to be deemed to be an insulated building within the meaning of the Act, by reason of its being at the distance of 25 feet from the public road, and 30 feet from the building nearest thereto, notwithstanding that such first mentioned building is at a distance of 15 feet only from ground not in the same possession or occupation therewith; and stated also, that he was under the impression that, inasmuch as by the leases of the premises in question, and the adjoining premises granted or to be granted by the ground landlord to the owners thereof, it is covenanted that a clear space of at the least 30 feet shall always be maintained between house and house, that the said building was to be deemed to be an insulated building."

The referees determined "that inasmuch as the building in question is distant from ground in another occupation 15 feet only, and not 30 feet as by the said Act required, it is not to be deemed an insulated building within the meaning of the said Act; and that inasmuch as the eaves cornice in question has not been built of the same materials as are by the said Act directed to be used for building the external walls to which such cornice belongs, or of such other proper and sufficient materials as the official referees have approved and permitted, the said eaves cornice is contrary to the said Act; but considering the comparatively insulated character of the building, we do hereby certify in pursuance of the said Act, and of the application of Mr. William Perkins for the approval of the materials of the said eaves, that so long as such building shall remain so distant 30 feet from any other building, we approve and permit the said eaves cornice referred to in the said application."

*** The enactment as regards projecting eaves of detached houses has caused much trouble and expense to builders, and for the most part, without the slightest advantage to the public. Wooden shop fronts may be fixed to adjoining houses, provided they are separated by a few inches of incombustible material, yet the eaves of the roof of a house standing alone, and only a few inches less than thirty feet *in any one part*, from ground not in the same occupation, must be made fire-proof all round. To comply with this requirement, slates have been fixed up with screws or nails to the feet of the rafters, in some cases in a very insecure manner. When the nails are corroded and give way, we shall probably hear of accidents.

RUINOUS BUILDINGS.

The district surveyor, in pursuance of an application to the official referees, surveyed the premises No. 103, St. John-street, Clerkenwell, and certified that they were dangerous to passengers, and ought to be pulled down or repaired forthwith.

The lessee and occupier of the building having obtained her surveyor's opinion, to the effect that it was not so far out of repair or ruinous as to be in danger of falling, and that the safety of passengers was not endangered thereby, appealed to the referees.

The referees determined "that the building in question, that is to say, the house, No. 103, St. John-street, Clerkenwell, is ruinous and dangerous, within the meaning of the Metropolitan Buildings Act, and ought to be forthwith hoarded in and shored up, and that in order to make the building secure, it is requisite to take out the external walls on the two fronts to Aylesbury-street and St. John-street, throughout the first or basement story, and to rebuild the same with bricks, or with stone in cement, and to build, in like manner, proper walls throughout the second or ground-floor story, or to put proper and sufficient story-posts to support the walls above, or otherwise in default of such work being done, to pull down the said building."

In another case, on an appeal against the certificate of the surveyor of the western district of the city of London, in respect of the front wall of two houses, 25 and 26, Field-lane, Holborn, the referees determined that it was not ruinous, and that the costs should be paid by the surveyor.

SCIENCE IN SOUTHAMPTON.

THE ARTESIAN WELL.

THE successful completion of the Artesian well is a matter of considerable moment to Southampton. No opportunity therefore, to obtain information from scientific men during the recent meeting of the British Association, has been lost. We referred in our last number to some of the statements made.

A joint deputation of the geological and mechanical sections visited the works at the request of the corporation to form an opinion as to the probable result of resuming the boring at the bottom of the shaft. They examined the strata and the engineer, and promised to make a special report upon the subject.

Soon after the deputation had left, Dr. Buckland, who in July, 1844, had reported on the well, arrived, and after examining into the matter, made, according to the *Hampshire Advertiser* (which by the way, contains a full report of all the proceedings), the following remarks:—"The water for the supply of the well at Grenelle comes from perhaps eighty miles off, but there was no fault or dislocation between the source and the delivery. That was not the case as between Southampton and the Isle of Wight, where a dislocation existed; the same might be said as regarded Winchester, where there was a break between St. Giles's and St. Catherine's Hill. They must, therefore, in order to form a judgment of the water they might expect here, and as to what height it would rise, go to Petersfield, where he believed there was no fracture (though he was aware of the fault said to exist at Portsdown), but if it should turn out that there was, then to Wilton (near Salisbury), and make the examination there. It may be that there was plenty of water under the very spot on which they were standing, which was only finding its way out at those places (Otterbourne and Petersfield, as explained in the pamphlet before alluded to). He was sorry, however, to mention that Mr. Gatehouse, at Chichester, had bored 1,050 feet down, of which about fifty were in the green-sand (into which they wanted to penetrate at Southampton), having but about 97 feet of plastic clay above the chalk, while ours was 480. Mr. Gatehouse, in his note to him (Dr. Buckland) says that having got this depth in the green sand, he at first got 78 gallons an hour; but it was now but 26 gallons an hour, and had a most intolerable odour (sulphuretted hydrogen). Now, how far that quantity per hour, with the odour of rotten eggs, would satisfy the people of Southampton, he would leave to their judgment—(laughter). He, however, had not gone to the gault, and therefore he (Dr. Buckland) would go on here at Southampton for the chance of getting water—he would go on, and if possible get to the bottom of the lower green sand. The tool or machine of M. Fauvelle promised to execute the work of boring so cheaply, that it would be most advisable to proceed with it."

The Mayor handed a letter to the doctor from Mr. R. Beart, of Godmanchester, which claimed for that party the invention of a boring tool similar in operation to that of M. Fauvelle. He had bored with it, in 1843, a well 65 feet deep and one in diameter, through a solid bed of clay, containing many large stones, some of which passed up the pipes of from four to five inches long, and two to three inches thick: the diameter of the pipe within being but 3½ inches, and 70 feet long; they were worked by four men, and descended from three to four feet per hour. He had taken out a patent for it.

Dr. Buckland said, if M. Fauvelle's instrument was the invention of an Englishman, of course he would reap the benefit of it. But with respect to this invention of M. Fauvelle, when he first saw it, it excited his astonishment, and even indignation, that it had not been found out before. He much regretted that they had not run out galleries, as he had suggested in his report on the well.

Mr. Docwra said he had acted upon that plan at Cheshunt, for the New River Company, and had obtained, at a depth of from 109 to 145 feet, with two galleries of 30 feet long, from 400 to 500 gallons per minute. He had proposed to go 80 feet in the chalk here, and strike galleries, and they would have had plenty of water for the whole town.

CHINESE BORING FOR ARTESIAN WELLS.

In connection with this subject, Mr. Vignolles read a paper at one of the meetings on Chinese boring, as practised on the continent, and as applicable to the boring of artesian wells and of the ventilation of mines. The ordinary method of boring is to screw together rods of one inch or more in diameter, adding the lengths (which are of six or eight feet) as the bore-hole is deepened. On the bottom of these rods the various cutting tools are screwed; and it is the tedious operation of lifting, lowering, screwing, and unscrewing these rods, and the liability of the cutting tools to get jambed, and the twisting, bending, and breaking of the rods, which constitute nine-tenths of the labour, expense, and delay of the old mode. A method of boring is employed on various parts of the continent, and particularly at the Saarbruck coal-mines, which is called the percussion or Chinese method. This process has been long practised in China, where they have thus bored to the depth of 1,000 feet and more. Instead of the tedious and expensive mode of boring with rods, one heavy bar of cast-iron, from six to ten feet in length, and of proportionate diameter—four to six inches—is furnished at the lower end with a cutting tool, combined with a suction-pipe, and is suspended from one end of a rope, passing over a large pulley fixed over the bore-hole. The other end of the rope is wound round a windlass, and the whole is worked like winding up and lowering down a bucket in an ordinary well: a contrivance is attached to let the weighted

tool fall down from any required height. As the rope is raised up and down over the wheel, torsion gives to this heavy tool a circular motion quite sufficient to change the place of the chissel at each descent. Bore-holes of from eighteen inches to two feet in diameter to a very great depth (several hundred yards), for the purpose of ventilation at the Saarbruck mines, have been sunk with facility and economy. Mr. Vignolles then explained the advantage of combining this Chinese method of boring with the improved system of Fauvelle.*

MENAI AND CONWAY BRIDGES.

Mr. Fairbairn and Mr. Hodgkinson both read papers on the proposed tubular bridge across the Menai straits, after which considerable discussion took place.

The bridge at Menai, which is to be called the Britannia-bridge, will be supported on four piers, and the distance between the central piers will be 450 feet. The weight of the metal is estimated at 1,200 tons, and it will be constructed of wrought-iron. Mr. Eyton suggested that it would be better to strengthen the tube by inverted iron arches, to protect it from the action of the wind. Dr. Robinson said that, though the bridge might be quite strong enough to bear a dead weight, he thought the engineers ought to ascertain what was likely to be the resilient force on the sudden rushing of the engine on to the bridge. He apprehended also that the vibrations might be cumulative, and increase as the train advanced, until they produced a serious effect. At the same time he trusted to the skill and caution of the engineers, that they would make the tube sufficiently strong, and with respect to the calculated action of the wind at 50lbs. to the square foot, he thought they had exceeded all possible effects of storms by one-half; for a wind acting with the power of 50lbs. to the square foot, must be moving with the velocity of 110 miles in an hour. During the severest storm that he had known the velocity of the wind was not more than fifty miles an hour. Mr. Fairbairn, in reply to these and to other remarks, said that not one-sixth of the estimated breaking weight could be placed on the bridge. The plates on the outside at the top would be nine-sixteenths of an inch, and those inside would be half an inch thick. The bridge from bank to bank, would consist of one rectangular tube, rivetted together and resting on the supports. To avoid the effect of vibration it was intended to lay the rails on vulcanised India rubber, about two inches thick. The tube would be elevated to its position in compartments, to be afterwards rivetted together when fitted. The first compartment nearest the pier would be raised on pontoons at high tide, and fitted into a rest at the bottom of a groove in the pier, up which it would be elevated by hydraulic pressure. The only risk to be feared in fixing the bridge was a high wind during the raising the first compartment, for when that was fixed the remainder would not be attended with risk. With respect to the strength of the bridge to bear a lateral pressure, he said that had not yet been tried, but it would be efficiently tested on the model bridge, and the suggestions of Dr. Robinson respecting sudden impact, and the effect of continued vibration, should be attended to.

ON GAS METERS.

A PAPER on this subject by Mr. Sharp, of Winchester, read before the British Association, may be found useful by many of our readers; we therefore give it entire:—

The use of coal-gas, for illumination, involves so much capital in its production and distribution, that the method of supplying it to the public is of vast importance.

The most equitable mode of doing so appears to be by measure; for, however high the price may be by contract, gas companies, owing to the extravagant and unfair burning, are not compensated; and the consequence is, that in those towns where gas is supplied partly by contract and partly by measure, those who burn by the latter method are charged by a higher price than they otherwise would be, in order to meet the loss thus sustained.

Some idea may be formed of the inefficiency of contracts, when it is stated that the orifices of burners are frequently so enlarged, that from 50 to 100 per cent. more gas is consumed than contracted for; thus the honest consumer, who burns his gas by measure is made to pay for the waste of the contract burner.

The position I take then is, that the only terms on which gas should be supplied is by measure.

It is therefore of importance, both to the manufacturer and consumer, that the quantity burnt should be accurately measured; and from the universal application of gas to domestic purposes, the subject is one of extreme interest.

The object of this paper is to inquire into the construction of some of the meters now in use, and it is not my intention to make invidious distinctions. The first to be noticed is the wet meter, so called on account of water being employed in its action. This consists of a cylinder case, within which revolves a shorter cylinder or drum, divided into four equal compartments. The gas as it enters some one of them forces that division to rise, and consequently the whole cylinder to turn round. A pivot or cog wheel is attached to the inner cylinder, which will turn with it, and count its revolutions. In one of these as much gas must pass through as will fill the space of its four compartments over the water line. The capacity of these being known, the quantity of gas will be known also; and it becomes easy to attach a piece of clock work to the machine so adjusted, as to point out on a dial the number of cubic feet that have passed through. About two-thirds of the cylinder or drum revolves in water, and the gas enters the space above the water by an elbow tube, which enters at the axis, and terminates immediately above the surface of the water. As the gas enters and exerts a pressure against the partition, it causes the cylinder to revolve.

This brief explanation of the construction of the original meter, I consider sufficient for the present purposes. The principal objection to this meter consists in the want of a proper adjustment of the surface of the water, an undue quantity of which reduces the capacity of the measuring compartments.

In the meters made by Botton, Edge, Milne, and some others, this is obviated by having an open tube, or waste water-pipe, leading from the proper surface of the water downwards into a close cistern, or waste water-box. There are other objections which create some inconvenience, two of which I will notice: first, the congelation of the water, which stops the supply of gas to the burners; secondly, its evaporation at high temperatures, which alters the water line, and then the meter registers against the company.

These are the principal defects of the original meter, to remedy which a number of attempts have been made by ingenious inventors to produce a meter to work without water. I shall not particularise each meter, but speak of them generally, and inquire how far the difficulties are met by the adoption of the dry meter.

The material of which the measuring chamber of the dry meter is formed, consists of leather or oil silk, which is liable to several objections. The gas is admitted alternately by valves into compartments on either side of the partition; the pressure of the gas occasions the partition to move forward, and as it distends it forces the gas out of that compartment, and the gas so expressed is in quantity to the sweep of the partition. As the diaphragm swells out it pushes before it a metal rod or lever, connected by a shaft with valves, by means of a combination of levers and cranks, with a worm or screw; a circular motion is given, which is transmitted to the registering wheels. It is a very elegant and ingenious method of measuring gas.

There are now several dry meters in use; their construction is very similar.

The objections to this meter as it is at present constructed are very great, and in my opinion fatal to its use. The complication of cranks and valves is a great obstacle; the latter are formed by flat surfaces of metal, and whether sliding or rotatory are very liable to derangement; for if a particle of dust scarcely perceptible to the eye be lodged beneath the valves and valve seat, they become unsound and the registration of the meter is incorrect. Nothing can be more destructive to the materials of the dry meter than the composition which is condensed on the valves and diaphragm, as it is impregnated with ammonia, the action of which upon its delicate machinery must shortly render it very imperfect. The charge brought against the wet meter, of its being subject to variable registration from the difference of the water line, is, as I have shewn, obviated by the inventions of Botton, Edge, Milne, and others; and with regard to the freezing of the wet meter, I consider the objection applicable to the dry meter, as there will generally be sufficient moisture on the valves in cold situations to form a small portion of ice.

It is known that gas cocks and valves freeze under similar circumstances, and it may readily be conceived that those of the dry meter will be liable to the same derangement. No one can be more anxious than myself that an efficient dry meter may be discovered; it will be one of the greatest boons ever conferred on proprietors of gas-works, as well as on the consumers of gas; and although great ingenuity has been exercised to bring it to perfection, it cannot be concealed, that these meters are, as the water meter once was, in their infancy. To what perfection they may hereafter attain no one can foretel, but at present there is nothing to justify their preference to the wet meter.

We do not expect to find it a perfect mathematical measure, calculated to the niceties of chemical manipulation, but we have a just measure. Meters are now made which will measure the gas passed through them with as much accuracy as ordinary balances will weigh and measure the articles we receive for our household use.

The public would have confidence in the gas meter if they understood more about its construction, and persons connected with gas works would find it much to their advantage if they were to instruct those of their customers who were willing to understand the principles upon which it measured the gas.

I would recommend a department connected with every large gas establishment for the purpose of testing all meters, and the consumer should be invited to witness the operation, which would allay suspicion.

In my opinion it is due to persons using gas that means should be taken to convince them of the honesty of the measure by which they are supplied.

LONDON TASTE.

MAY I beg to call your attention, Mr. BUILDER, to the present appearance and state of the tripod lamp in Waterloo-place; for some years it has been disfigured in a strange manner by two rusty iron pipes, running up its stem into a cylindrical box of certainly not much taste in its ornaments. The lamp which surmounts this strange shaft is singularly obscured by the inattention, I presume, either of the gas-light man or of the Bude light hero. The railings as well as the "whole set out," is shamefully neglected, and is crying out for another coat of paint. It would be a charity to get one of the red jacketted sweepers to use his besom in freeing the inclosure of *stones, dirt*, &c. Will you, Mr. BUILDER, use your influence in restoring this unfortunate luminary to its original shining appearance and condition?

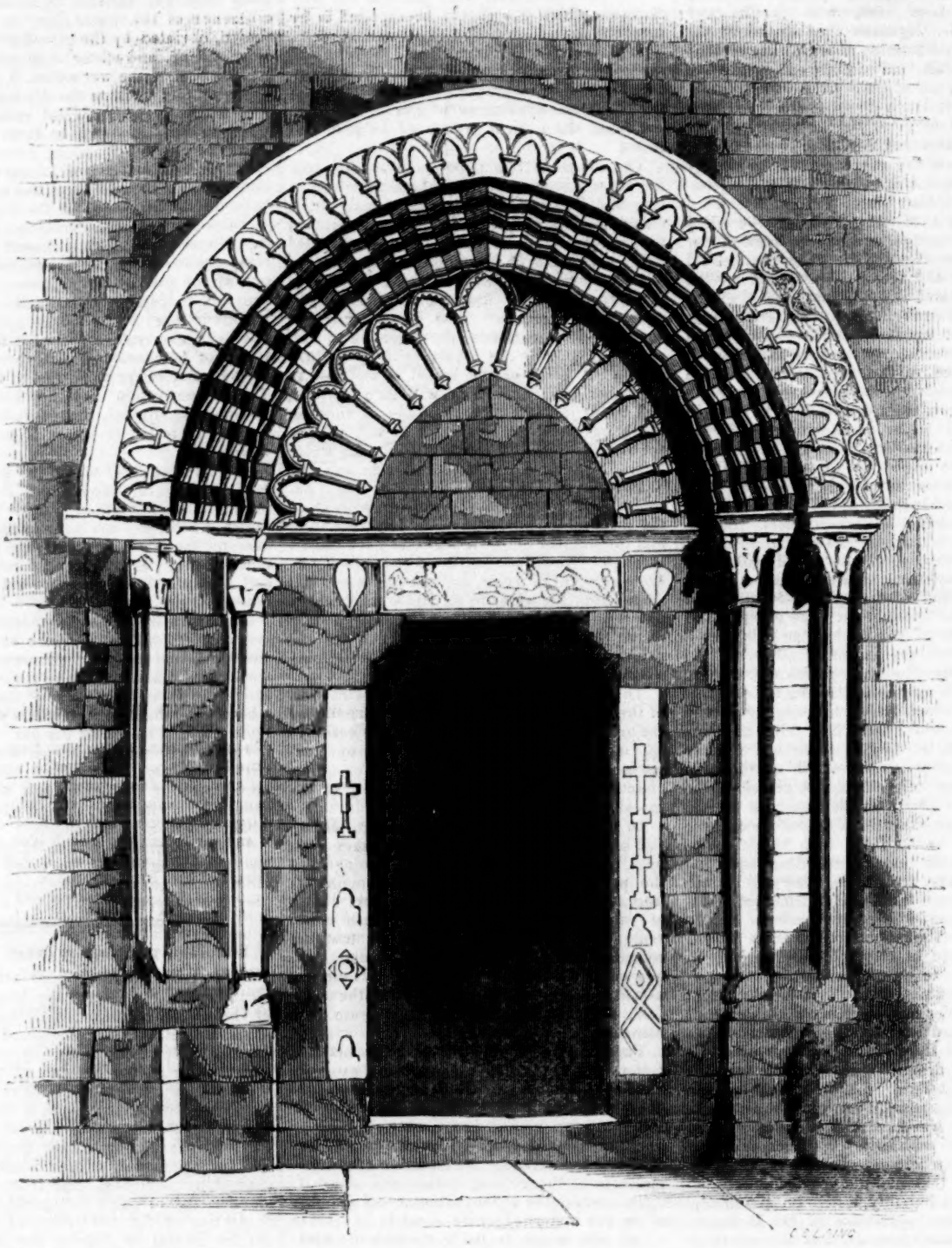
I also wish you would ask the parochial authorities of St. James's Church, Piccadilly, to endeavour, either by pointing, or cleaning, or compoing, or by any other means *you* and they think best, to put a better and less gloomy look on the exterior of their splendid building. I am sure that Sir Christopher Wren never wished so much dulness to be seen in any structure, and least of all in a church. The parish now have a capital opportunity of embellishing the outside, as they have all the scaffolding poles, men, and materials, &c., inside the church, and therefore at hand. Hoping this will cause attention in the proper channels, I am, Mr. BUILDER, your constant reader,

Sept. 14th, 1846, A LONDONER.

NEW EPISCOPAL COLLEGE.—The foundation-stone of the Trinity College for episcopalians, near Perth, was laid on Tuesday week.

* See page 453, *ante*.

ARCHITECTURE OF SICILY.—DOORWAY FROM FAVARA.



ARCHITECTURE IN SICILY.

The works of the Normans in Sicily being still comparatively unknown in England, we have availed ourselves of Mr. Granville's recent visit to that country to place some examples of it before our readers. Above we give a representation of a beautiful Norman doorway from Favara, and shall in an early ensuing number add others, with some descriptive remarks.

Painting Old Ironwork.—In reply to the inquiry on this head in a recent number, a correspondent recommends the querist to have the railings well cleaned and then to give them two coats of lamp-black and boiled oil, after which he may paint them any colour he pleases.

HOUSE DRAINAGE.

IMPROVED TRAP.

Sir,—In order to effect an improvement of great utility, I would beg to suggest a few remarks as to the imperative necessity of awakening the public mind to a subject of the greatest importance,—house drainage.

Animal and vegetable substances, filth and excrement in a state of fermentation and decomposition, evolve gaseous products of a foul and offensive nature, which gases, if inhaled, are highly injurious to health and life. The atmosphere of sewers and drains, therefore, is always charged with the foulest of impurities. If the drain of a house be untrapped, a free circulation of air is by its means kept up between the house and the sewer. Now, if the sewer drew a current of air from the house, then little, or perhaps no unpleasantness would arise, as the sewer would be likely, in some degree, to ventilate the house (which, by the by, would be a novel mode of ventilation), but in almost all cases it is found that the house draws a current of air from the sewer. Hence the cause of those disgusting, filthy, and offensive smells, with which the atmosphere of many houses is infected.

In order to prevent, and free a house from this evil, direct atmospheric communication between it and the sewer must be wholly cut off; this is best effected by what is termed "trapping the drain." All cesspool arrangements impede the progress of the sewage in its passage to the sewer, and cause it to dissolve and decompose within them; and thus the atmosphere of the house becomes contaminated, and is in consequence extremely annoying and injurious to the health of the inhabitants. Cesspools, therefore, or any other arrangements which prevent the sewage from being immediately carried into the sewer, are highly detrimental and objectionable; in fact, they are, as regards utility, wholly unnecessary, and their formation should be discontinued

forthwith. The old-fashioned brick drain traps, with a dip-stone placed across them, are nothing better than cesspools on a small scale, for they very often become filled with soil, and choke up the drain.

I understand that the court of sewers for Westminster have recently adopted a very simple and efficient drain-pipe trap, which will keep itself clean, and cannot very easily get out of order. It is represented by the annexed wood-cut. They are to be six inches diameter, made of brown stone-ware glazed.

Small-sized pipe drains, from three to six inches bore, according to the size and character of the house, are amply large enough to carry away the drainage therefrom. I trust that the official referees will be induced shortly to recommend a modification of the Metropolitan Buildings Act, sect. 11, Schedule H., so that glazed pipes of the above sizes and upwards may be allowed to be used in the construction of house-drains.*

A body of water running through a drain of small capacity will not only keep it well washed out and clean, but the water, by filling the pipes at every discharge, forces with it into the sewer all the foul gases that are generated in the drain; and by the introduction of a trap next the sewer, similar to the one here shewn, there can be no retrogression or passage of foul air from the sewer into the house, and the impetus of the water in descending into the trap will force its way along it, and prevent it from choking up, besides being of easy approach from the sewer. This trap can also be placed very advantageously in other situations along the line of drain where traps may be requisite, to prevent the escape of effluvia and smells from the various outlets.

While the importance of good house drainage is seen and felt by every one, there appears to be great ignorance and neglect displayed in the arrangement and construction of it. I trust that, for the sake of public decency, comfort, and health, these few remarks may not be disregarded by architects and builders generally, but that they may be induced to give this subject their serious attention, and have the drainage of houses formed so that it may act efficiently in conveying away the filth, instead of retaining it within the house.

What really is more hurtful, obnoxious, and disgusting, than for masses of filth to be constantly lying in drains and cesspools, engendering poisonous gasses under one's nose, vitiating the atmosphere, and thus silently but destructively preying upon our constitutions? The present system of draining houses requires, in my humble opinion, an entire revision, and to effect which is extremely simple.

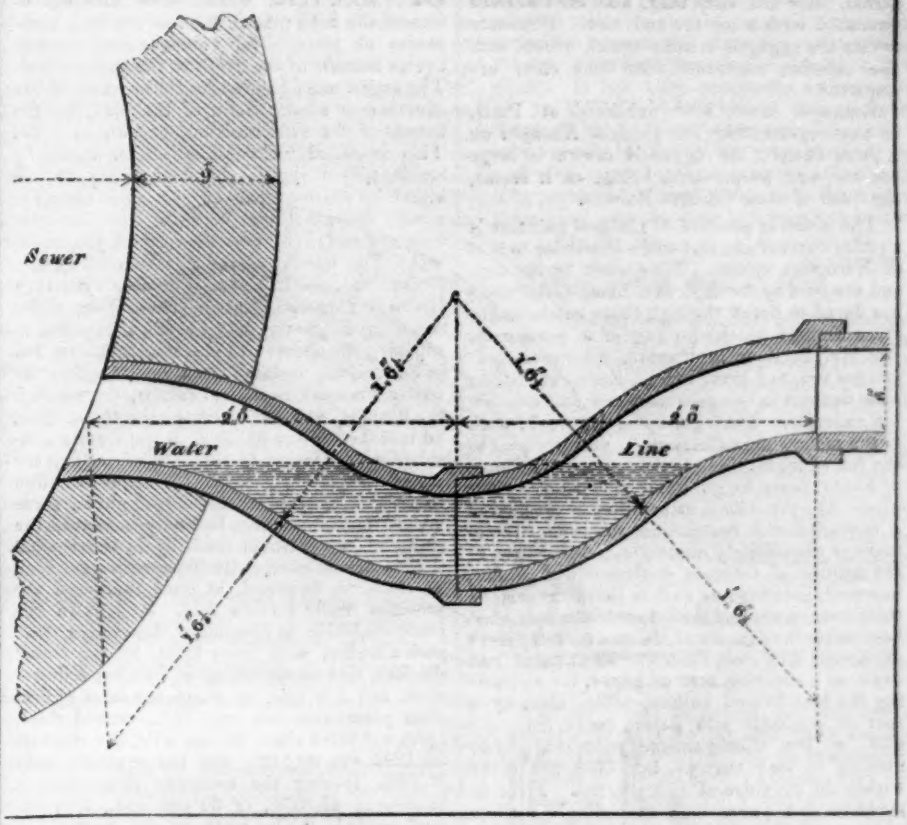
COMMUNE BONUM.

London, Sept. 12th, 1846.

*** The improved trap here illustrated was first proposed in our own pages, at the commencement of the year. (See p. 130.) It has been carried out as above by the Commissioners' surveyor, Mr. Phillips.

* The desirableness for this modification has been already pointed out by us; see p. 109, *&c. ante.* A similar modification in respect of flues should also be made immediately.—ED.

IMPROVED TRAP FOR HOUSE DRAINS.



A NOTE IN BATH.

THERE are few English cities so beautifully situated as Bath, or which display so much good taste. Seen from a distance, the effect of its varied levels and its architecturally arranged terraces and crescents is singularly striking. We often steal an hour when whizzing along the Great Western line in pursuit of our calling, to pause here, wander through its suburbs, and admire its loveliness. We are not of that cast who think the whole duty of man is work, and look upon the useful and the beautiful as two distinct things. If as a people we thought more of the latter we should be happier and better.

The *Spectator*, in a recent article on our great pretensions to improvement in London and our puny practice, in reply to a remark, that to endeavour to get rid of smoke is thought eccentric, as after all it is *only* a matter of beauty, says most truly, "*only* beauty! No wonder the English are a discontented, drunken, and melancholy people."

If we think over this sentence, it will be seen to have much meaning. Beauty and usefulness are closely connected, even if they be not synonymous. And right usefully are those employed who seek to produce forms of beauty, and open the enjoyment of them to the masses.

Bath owes much to its situation, the possession of a handsome, though not very durable, building material, and the architect, John Wood. "Where Wood began," says the Rev. William Mitford,* "or where he ended, I know not: it suffices for me that, avoiding a street, he built the circus and the crescent. He was a man who, with a disposition to bold design, had the moderation and judgment to respect authority and shun extravagance. His style was the Roman. The idea of his circus has been derived from the Romanamphitheatre: it is the Roman amphitheatre ingeniously and judiciously adapted to his purpose by inversion; the exterior of the Roman, making the interior of the circle at Bath." Objections we will not now talk about. Bath is greatly his debtor. He also built Buckland for Sir John Throckmorton, and died in 1754.

If you wish a beautiful prospect you may go to Lansdown-terrace; if some clever modern engineering, the railway station will afford it to you; while the Abbey Church will exhibit to you a last effort of medieval art.†

The curious sculptures for which the west front is remarkable, are, we regret to say, fast disappearing. In a very few years more the ladders and angels will be *entirely* obliterated, indeed they are nearly so now, and a flat surface will alone remain. The new church on Widcombe Hill, St Mathew's, building under the direction of Mr. Manners, who restored the Abbey Church some years ago, is nearly ready for roofing in. The external walls throughout are completed, and the main columns and arches which form the aisles are in progress; these columns, by the way, are very slight. The weather-cock was fixed on the spire a fortnight ago, and the workmen are now cleaning off the tower as they come down. The church has a short transept, and is of the decorated period.

* "Principles of Design in Architecture."—1809.

† It was not finished at the time of the Reformation.

NEW PRISON IN THE CITY.—Plans for building a new prison for the city have been before the Committee of Common Council. The first question to be decided is, whether it shall be erected within the city bounds or not.

ART AND INDUSTRY IN CHINA.

THE collection now exhibiting at the office of the Secretary of Commerce and Industry, at Paris, presents several specimens of that strange *combination* of art—Chinese painstaking and patience, with the modern system of art and perspective. The leader of this new school is Mr. Lamp-Quoi, of Canton, whose portrait of Mr. Rénard (one of the commercial commissioners) could conveniently be placed in any of our exhibitions—in fact, comes up to the best French miniatures. The above artist, however, is subject to much annoyance from his countrymen, and Mr. Rénard has acquired many of his pictures, which had been *returned* to the artist by his dissatisfied Chinese customers. Amongst these, the portrait of a lady of surprising beauty, is especially noticed as an object of real art.—The next painter of the modern school is Mr. *You-Quoi* the elder, and the collection exhibits a series of *oil* pictures of a true and correct perspective. Mr. You-quoi has not studied under an European master, but acquired his knowledge from the inspection of our engravings and lithographs. Two immense *canvasses* by him—a view of the river Tshan-Kiang, and a panorama of Canton, are very fine specimens of perspective, but the colours and the figures are not so commendable.

The next artist to be mentioned is Mr. *Ting-Quoi*, who has executed a collection for Mr. Rénard, which has not its equal in Europe. They are sketches of a number of Chinese trades and manufactories, the sight of which is either forbidden to Europeans, or useless for want of the necessary interpreters, &c. Here every trade and manufactorial branch are sketched, not only in their general features, but *every operation* and *process* occupies a separate sheet of paper. This is a very original and pregnant idea. Strange to say, all these machineries and *tool-work* are executed with a great freedom, by only the means of *a brush*; and the artist, encumbered by his long nails, grasps them with his full fist, as they do a dagger in the play. Thus he draws circles, ovals, parallel lines, &c., with an exactitude and nicety quite astonishing, shaming all our compasses, squares, and rules.

Amongst the interesting specimens brought back by Mr. R., Chinese *paper hangings* must be also adverted to. There no tapestry is used at all; they make for that purpose extensive

views, or other scenery, painted on strong paper, and supported at each end by a roller of bamboo. Thus they are hung up on the walls like our maps. Not being, like in our climes, subject to smoke and other *impairments*, they last very long, and are therefore executed with much art and care. First-rate artists are engaged in these works, which, with the *Albums*, constitute now their chief occupation.

Amongst those now exhibited at Paris, is one representing the goddess *Kannyin* on a lotus flower; the figure is drawn in large *contour* and proportions, being, as it seems, the work of some Chinese Rubens.

The hitherto position of Chinese painters is a rather curious one, and much dissimilar to that of European artists. They work by *the day*, and are paid *by the day*. Mr. Lamp-Quoi alone has dared to break through these rules, and to place himself on the footing of a gentleman. But Mr. L. lives in Canton, where his employers are, to a great extent, Europeans. The poor daubers in the provinces can never follow his example. They get up at daybreak, walk to the *picture manufactory* (!), and work up to the fall of night. The better only, get a couple of hours' leave to go home and smoke their pipe. On the whole, as painting is considered a *manufactorial* occupation, the price of pictures is exceedingly moderate. According to the opinion of Chinese statesmen and literati, however, painting, as well as literature, are on their wane now; and both these *trades* flourished best under the dynasty of *Müng*, a contemporary of Louis XIV. of France. They paint and draw on a superior sort of paper, far surpassing the best Bristol vellum, often, also, on a sort of vegetable pith paper, made from the pith of the *Œschynomene paludosa*, whose making is very curious, but does not come within the province of this journal. Pictures made on this paper look exceedingly mellow and smooth—*carnation*, especially, obtains a great degree of force and *relief*. As the Paris collection contains such rich and well-chosen specimens of Chinese art and industry, the exertions of French *Chinologues*, like Mr. Jullien, &c., will have ample materials for further and, no doubt, interesting researches. J. L.

ARCHITECTS' TROUBLES.

COMPETITIONS.

An eminent provincial architect, writing to us on general subjects connected with the profession, makes the following remarks:—

"I am fond of the architectural part of my profession, and, as a matter of simple choice, would prefer devoting my attention to it; but the harass, the annoyance, the spoiling of your designs, the officious intermeddling with your best ideas, the running fight you are obliged constantly to maintain, are such, that were it not for attachment to it, I would eschew it altogether.

My surveying business is conducted with far less trouble, and far more profit. In surveys, consultations, opinions, valuations, measurements, estimates, one's word is law; the clients do not feel competent to dispute your dictum, and if they do, as has been observed on another occasion, you have a thicket of mathematics to retire into, into which they are quite incompetent to follow. Not so with architectural designs. Every ignorant fellow thinks he is quite as competent to put in an opinion as yourself, and will spoil your best designs for the sake of introducing some absurdity of his own. Moreover, he has a very inadequate notion of their cost to you.

One thing I have fully resolved on, and that is to give up contributing to advertised competitions. Professor Hosking has placed the matter in the right point of view, and in future I will be no party to support the system of wholesale plunder which has been carried on so long. Not very long since I obtained a commission for a very large building by competition, but it was conducted in this way:—Several architects were applied to privately, and the plans were to be paid for whether adopted or not. (At least such was the arrangement with me.) The building is now about to be commenced. It is for commercial purposes, fire-proof throughout, and will cost about 20,000*l.*, exclusive of land."

RAILWAY JOTTINGS.

The families of persons killed by accident on railways, through neglect or default of companies or other persons, are now, by the Act 9 & 10 Vict. c. 93, which came into operation on the 26th ult., entitled to sue such companies or persons for compensation, within twelve months of the death of the party killed. The action must be brought in the name of the executor or administrator of the dead, for the benefit of the wife, husband, parent, or child. This is called "Compensation for death by accident,"—a slight misnomer, since no one killed by accident can be ever thus compensated; though it may be some little consolation, certainly, to know, that others interested will. The benefit of the Act does not extend to Scotland.——In a series of able articles, a Cornhill correspondent of the *Times*, under the nom de guerre of "Cato," is engaged in exposing the abuses still prevalent and legalized in our railway system. In a recent article the writer presents statistical details, from which the benefits derivable to companies themselves, no less than to the public at large, from a considerable reduction of the rate of traffic, are placed in a striking light. He points attention to the fact, that while the Birmingham, three years after its opening, had only increased the traffic of the ordinary roads by 1¼ times what it was, the Belgian, with its lower fares, such as those in Scotland, at once increased the previous traffic sixteen fold. And as to the profit derivable to companies themselves from such a traffic, with lower fares, he represents the fact, that on the Glasgow, Paisley, Kilmarnock, and Ayr line, on which the fares of first class passengers are only 1¼d., second class, 1¼d., and third class, ¾d. per mile, the revenue for 1845 was 90,545*l.*, and the expenses only 36,288*l.* leaving the company themselves a balance of 45,257*l.*, or 60 per cent., free annual profit! "The truth of the matter is," says Cato, "the English companies charge most extravagantly, without having one good ground of justification. They have a monopoly, and that they think is quite enough." They wish in fact to let what they erroneously imagine to be *well*, for themselves, *alone*.——Mr. Bury, the engineer-in-chief of the locomotive department of the Birmingham line, is fitting up some improved water-cranes, with "Underhay's" patent cam valve; thereby simplifying the former mode of supplying the tenders with water.——The post-office authorities having recently asked the directors of the newly amalgamated "London and North Western" whether they could run a mail train between London and Liverpool in five hours, or at an average speed of forty-two miles an hour, including all stoppages, a special train of six carriages was run on Friday week from London to Manchester, fourteen miles short of the distance to Liverpool, within five hours, although a stoppage of nearly thirty minutes occurred during the transit. The desire of the post-office authorities, therefore, can be readily complied with.——The Doncastrians are congratulating themselves on the probable realization of their hopes of planting the "Great Northern" centre at Doncaster, although their Retford neighbours are vieing with them by "petitioning" for the appropriation of the benefit to themselves. The Doncaster station, at all events, is to be a grand affair, if Mr. Cubitt's plan is carried out. "It is intended," says the *Doncaster Gazette*, "that the principal entrance to the station shall be placed on the site of the present Gaol. The buildings will be first rate. Some idea may be formed of their extent and character when it is stated that an area of about thirty-five acres will be required for the works, and the purposes connected with this magnificent undertaking," which will constitute the "grand junction of a number of lines." It is proposed to re-erect the Gaol behind the proposed Town Hall.—— The Iron Ruler has had "the heads of several of the first mercantile firms" of the respectable community of Hull at his feet, with a memorial, (sic scribitur), beseeching him to grant them also a grand railway station or terminus, which was lately laid before his Majesty, who, in "a courteous reply to this memorial" stated "that the subject of a new railway terminus at Hull should be taken into serious consideration."—— Land along the Edinburgh and Glasgow line has risen in value from less than 5*s.* to more than 30*s.*, and even 40*s.* an acre, annual rent. ——The foundation stone of the great viaduct which is to cross the river Ayr, in a deep wooded ravine at Ballochmyle, on the line of the Glasgow, Paisley, Kilmarnock and Ayr line of railway, was laid on Saturday last. It will be three-quarters of a mile in length from bank to bank, and will cost 100,000*l.*——A bridge on the Bruges and Thorout continental railway suddenly gave way on Saturday week, whilst workmen were employed in rasing it, at any rate, to its foundation, which was originally bad. One man was killed, and several were extricated from the ruins very much injured.

The electric telegraph between Brussels, Malines, and Antwerp was opened *to the public* for individual communications on the 9th instant. The charges are fixed at 50 c. from one to twenty words, 10 c. for the reply, and 50 c. for communicating it to the residence of the inquirer.——By the way, the scale of charge for telegraphic messages on the South Eastern Railway has been also published: — Minimum charge, 5*s.* for a message of twenty words; charge to Tonbridge, 5*s.*; to Maidstone, 7*s.* 6*d.*; to Folkestone and Canterbury, 10*s.* 6*d.*; to Dover, 11*s.*; to Ramsgate 12*s.* 6*d.*——Mr. Morse, of America, has communicated to the Academy of Sciences at Paris, the following list of electro-telegraphic lines already established in the United States:—

	Miles.
Albany to Buffalo	350
New York to Boston	220
Ditto to Albany	150
Ditto to Washington	230
Washington to Baltimore	40
Baltimore to Philadelphia	97
Philadelphia to New York	88
New York to Newhaven	84
Newhaven to Hartford	30
Hartford to Springfield	20
Springfield to Boston	98
Albany to Rochester	252
Total	1,659

Mr. Morse states, that the electric telegraph is now the chief mode of transmitting all the news of the Government, and the important correspondence of merchants, and of the public generally. Its influence has, he says, been already felt by the press. The journals of the large towns, which were taken in the country on account of their giving the most recent news, have lost a great number of subscribers, whilst there has been a very large increase in the circulation of the journals of the small towns near the extreme points of the telegraphs. The extent of the lines of electric telegraph in France is very small, compared with the account given by Mr. Morse, and very slow progress has been made by the Government committee on telegraphs, at the head of which is M. Arago: this committee is to report on the various systems of telegraphic communication, particularly those of Mr. Morse and Mr. Bain, of Edinburgh, which have been submitted to it.

ARCHITECTURAL SCHOOLS OF DESIGN.

Mr. Editor,—I take the liberty of addressing myself to you on a subject which I consider is one of the greatest importance to all students who are desirous of distinguishing themselves in their profession. The want of an institution to which the architectural student might resort, established exclusively for the study of architecture, must be felt by almost all of us. True, it may be argued there are schools of design already established, but I would inquire,—Do they teach architecture as an art? is it not considered in a secondary light, if not passed over altogether? for instance, the Government School of Design,—do they teach architecture there? I think not; they *profess* to have a master for architectural students, but what is the architecture they teach? Copying ornamental drawings, and perhaps a little of perspective; in fact, *that* they are very sparing with. I myself belonged to that school (the morning school) for six or seven months, and what did I learn? to copy ornamental drawings and the figure, which are all very well in their way, but not every thing to the architectural student, and as a proof of the manner in which architecture is slighted, I requested of the director permission to attend the evening

school for the study of perspective, to which request he inquired what I was studying for? and on my informing him, he replied,—"We do not profess to teach architecture, because it interferes with the right of private individuals."

Now, Sir, it occurred to me, could not a school be established at which the student might attend after office hours, in which architecture might be exclusively taught? And what is to prevent such being the case if a number of us club together, and put our shoulders to the wheel and form it? The advantages such a scheme would offer to the architectural student must be obvious to all; it would not only be the means of mutually improving ourselves, but it would unite together as a band of friends all the future members of the profession; and if under the superintendence of an eminent member of the profession, who would be engaged to direct us in our studies, would prove of the greatest advantage to all. By some it may be argued—we might be able to study by ourselves without going to the expense of belonging to a society like the one proposed; but I would inquire—do the majority of those who are studying for the architectural profession possess facilities for drawing? Does every architectural student possess a good architectural library, drawings, &c.? I think not; but by union we might possess a spacious school, a good library, casts, drawings, and, in fact, every thing necessary for study at very small expense to each. I would, therefore, earnestly request the established members of the profession to give us their valuable aid, and to assist us in our scheme; for if they countenance it, our success is certain. Perhaps it may be considered, that by establishing a society like that now proposed, we intimate that we do not consider we have sufficient facilities afforded us for improving ourselves in the office. But such is not the case; our object is to obtain as much knowledge as possible, so that we may be better able to perform its duties, and to fit ourselves to undertake the responsible duties of the profession in after years.

Humbly apologizing for trespassing so much upon the columns of your valuable journal, I remain, Mr. Editor, yours most respectfully,

An Architectural Student.

PROVINCIAL NEWS.

Her Majesty's builder, Mr. Jenner, has contracted with the Woods and Forests for the enlargement of one of the towers of Windsor Castle, that, namely, on the south-west side of the Round Tower, hitherto appropriated for the offices of the resident clerk of the works. An entire story is to be added, and new rooms and offices formed in the basement. Mr. Turnbull, the newly appointed clerk of the works at Windsor, is to occupy the tower as a residence.——Hampton-court Palace is visited every Sunday by 6,000 persons, chiefly, of course, from the metropolis. —— The little town of Folkstone is at present in a bustle from the progress of various works of some importance to its reviving prospects. The extension of the south pier is going on rapidly. The divers are still at work. The piling for deepening the mouth of the harbour is in steady progress. A number of good houses are being built, and there is a good deal of general traffic. It is intended, also, to extend the west pier and the tram road in connection with it, by throwing a strong bridge for the trains to pass across to a station near the Pavilion Hotel; the passage of vessels being, of course, provided for by an intervening swing in the bridge.——At Portland, engineers are actively engaged in preparations for the projected breakwater, and arrangements for the most convenient mode of communication with the island for the transmission of materials. The break-water, it appears, will be directed eastward, from a point a little to the northward of the Old Castle.——The works at Devonport are to be pushed on with the utmost rapidity, so that it is expected one of the basins will be opened for the admission of steamers in about 3½ years from the present time. There will be two immense basins; the north basin 650 feet by 625 feet; and the south basin 625 feet by 560 feet; each holding a depth of 27 feet of water, and admitting 18 first-class vessels to be fitted out, or 25 of all classes. There will be three large docks; the north dock, 300 feet long by 94 feet wide, for first-rates; another 406 feet long by 82 feet wide, for steamers of the largest class; and the south dock 300 feet long by 82 feet wide. The entrance lock will permit steamers to be docked at ebb tide in 18 feet of water, spring tide, and may be used as a dock when required. The factory is to contain all sorts of machinery for the repair of steam-engines, and will be 800 feet long by 320 feet broad, including boiler, rigging, and store-houses. Vessels will here be passed from the first department to the last in succession, o as to be ready for sea when ready to quit the basin.——The expiry of the time allowed for the lodgment of tenders for supplying the city of Bristol with gas for a term of years, has ushered in a further reduction by both of the present companies in their price of gas to 6s. per 1,000 cubic feet, with a discount on large quantities.——The high cross in the market place at Glastonbury has been completed. ——Amongst the improvements contemplated at Dorchester, is that of a public cemetery (joint-parochial we presume, as recommended by our correspondent, Mr. Parry).——The new church of St. Andrew, Bordesley, is to be consecrated on the 30th instant.——The Manchester Parks Committee have been agreeably surprised to find that there is no such deficiency (of 500*l.*) in their funds as they supposed. The following appears to be the statement of their general expenditure:—

Purchase of three parks and buildings thereon	£25,000
Messrs. Pimm and Richardson, the contractors	3,400
Mr. Warburton, wood-fencing	1,000
Trees and shrubs	800
	£30,200

The tenders for refreshment rooms, already lodged, were not so numerous as was expected. They were to be examined on Monday. The committee meant to recommend the council to authorize the expenditure of 1,200*l.* in providing garden tools and additional apparatus, and also proper conveniences, and other accommodations for visitors.——A new Roman Catholic Church is about to be erected near the Maudlands railway station, at Preston; 1,000*l.* have been already subscribed.——The Health of Towns Committee, at Hull, have resolved to recommend to the council an addition of six public baths to the two now in progress; two of them to be immediately erected in the most densely populated parts of the town.——On Thursday week a portion of the Edinburgh Western Cemetery was formally consecrated by Dr. Terrot, the bishop of the diocese.——The new moiety of Greyfriars Church, at Edinburgh, called the New Greyfriars, which, in common with the older portion, suffered extensive damage by fire about a year and a half ago, has been repaired and re-opened.——A gas-work chimney 320 feet high, has been erected at Edinburgh. It rests on a pedestal, and is so built, as to form an ornamental object.

TO PREVENT STAINS FROM SMOKY BRICKS.

Sir,—I beg leave to inform "W. N." of a simple and cheap method of preventing any stain from smoked bricks (be they ever so bad), passing through plastering. The first particular proof of the efficacy of my method was in the year 1808, at a tanner's in this town, who had a very large old-fashioned chimney, part of which he wanted to convert into a closet, and the other part to be occupied by a then modern Bath stove. The part of the interior of the chimney, intended for the closet, I arched over, but a great difficulty was to be overcome in plastering it.

As nothing but the refuse bark or tan used in his trade, had been burnt on the hearth for many years, the interior of the chimney was encrusted over, not with soot, but with a hard pitchy substance, about three-fourths of an inch or more in thickness. This substance I chiselled off to the face of the brickwork; the bricks were also stained nearly through. I first plastered them over with a thick rough coat of well-haired cinder ash mortar, which I left to be thoroughly dry before I laid on a second, but rather finer coat of the same materials, which I floated off, and left for a third coat of fine white stuff, which was laid on when the second coat was nearly dry; afterwards I whitewashed it, and not a single stain appeared through the plastering, nor for several years did I ever see one in it, and believe to this day there never was one. The next job of a similar nature, a year or two after, was at a bake-office chimney, where I adopted a similar method, and with the same success. I went this very day, after reading the article in The Builder, and inspected the closet. It has been repeatedly whitewashed, but not a single stain appears, though thirty-three or thirty-four years have elapsed. I have invariably adopted the same method, and with the same success in many other cases. The purer the cinder ashes, and the more of them used with the lime and hair, the better.

I am, Sir, &c., A. J. Green,
Bricklayer.

Sudbury, Suffolk, Sept., 19, 1846.

*** Another correspondent on the same subject ("J. C.") says he has effectually overcome the evil complained of "by cutting out the plaster about one inch longer and wider than the smoky brick, putting in a piece of slate the same size close to the brick, and plastering it over. This should be done after the first coat of plaster is laid on, as every smoky brick is then to be seen." Several others say, that if the first coat of plastering be made like the ordinary cow-dung pargetting, no stain will appear. It has given us gratification to receive more than a dozen replies to the inquiry.

WESTMINSTER COURT OF SEWERS.

At a court held on Friday, the 14th instant, Capt. Bague in the chair, the clerk reported that the sum of 16,184*l.* 12s. 4d. remained in the hands of the bankers. Petitions were then granted for building 3,014 feet of sewer, for laying 242 drains, and for flapping 71 drains. 107 new gully drains were ordered to be put in.

On the motion of Mr. Cumberlege, seconded by Mr. Le Breton, Mr. Phillips was appointed chief surveyor to this commission from the 6th September instant.

It was moved by Mr. Cumberlege, and seconded by Mr. John White, "That an enlargement of Buckingham Palace being contemplated, the surveyor report upon the King's Scholar's Pond Sewer as it affects the palace, and *vice versâ*; and also generally, with a view to consider whether any better line than the present may be adopted." Carried by 6 to 2. Mr. Rennie's report thereon of the 27th May, 1806, was to be reprinted and circulated to the commissioners.

On Friday, the 18th inst., Mr. F. Chalmers in the chair, a letter was read complaining of the state of the sewerage in Stephen-street, Lisson-grove. The court ordered that the several improvements of the sewerage of the neighbourhood, proposed in the surveyor's report, be approved, and carried out as early as possible.

Tenders for the court-house were opened as follows:—

Foot	£228	5	0
Basset	214	19	10
Warne	214	9	0
Joy	212	5	6

Joy's tender was accepted.

A general specification of works for building sewers, prepared and submitted by the surveyor, was considered and adopted, and tenders for several works were ordered to be advertised for, to be opened at two o'clock on Friday, 2nd October.

Several reports from the surveyor were then read; among which was one for improving the drainage of St. Anne's-court, and Edward-street, Soho, and one for covering in an open sewer at the back of Cromwell-lane, Old Brompton.—Ordered, that the proposed works be done.

Upon the motion of Mr. Cumberlege, seconded by Mr. Gunter, the court resolved, nem. con., "that the salary of the chief surveyor be fixed at 400*l.* per annum."

Thos. Rowe, clerk of works, reported that a sewer recently built, near Notting-hill, had in many parts been executed in a slovenly and unworkmanlike manner.—Ordered, that the defective parts be forthwith taken down and rebuilt. Adjourned to Friday, 2nd October.

New Books.

Kelly's Practical Builders' Price Book; or, Safe Guide to the Valuation of all kinds of Artificers' Work. Kelly, Paternoster-row. 1846.

This is a very useful work, and may be safely purchased as well by all students, whether in surveyors or architects' offices, as by builders. The preface says justly:—

"The price of any article upon which the skill of the artisan is employed in the production, must depend upon two elements of calculation—the price of the material, and the wages of the workmen. The latter is not much changed in the lapse of a few years, but the former is constantly varying; and hence it is, that to secure a perpetual accuracy in the valuation of builders' work, it is necessary that every list of prices should be formed upon the value of the material employed. This being done, nothing is easier than to regulate the price according to the rise or fall in the market; and thus making, in fact, a scale of prices almost perpetual. In the present, as in former editions, timber, deals, and other materials are taken at their present value; and the calculation of portions of builders' works constructed from them are shewn in detail, to assist the surveyor or builder in making such alterations from time to time as may be necessary."

An important feature in the book is a descriptive account of the modes of measuring artificers' work, which seems very clear and correct. We would remark, in respect of the prices given, that they appear, in most cases, to be full, and (as in all other price books) suppose the work done in the *best* manner. This should always be kept in mind in valuing work. Bad work is better paid for than good, though the prices given for it be fifteen per cent. less than good work would be entitled to. Want of consideration for this by surveyors, in making out accounts, has done much harm.

Correspondence.

NORTH WALSHAM CHURCH.

Sir,—In the interesting account of North Walsham Church, which appeared in a recent number of The Builder, it has been omitted to mention, that two perfect "brasses of chalices," with short inscriptions, remain in the nave and chancel. Instances of a simple chalice, as a sepulchral memorial, were very frequent formerly, as the numerous "matrices," which abound in our churches, still prove. The brasses themselves are, however, now very rarely to be met with; and North Walsham is the only church with which I am acquainted that has *two* of these memorials perfect. One occurs in Shorne Church, Kent, and one also in Cirencester Church.

The fine old chest, which is placed in the south aisle of the chancel (its original position), is certainly deserving of notice. It is in excellent preservation, and of enormous strength. It is firmly fixed between four strong posts, which are stubbed into oak sleepers let into the floor. It is formed of oak, four inches thick, and entirely plated by straps of iron crossed and recrossed.

The locks which defend it (nine in number) are truly admirable specimens of the locksmith's skill—the key-holes being quaintly concealed by a variety of devices (moving by means of secret springs), such as dragons' heads, serpents, &c.; besides all these precautions, three ponderous bars of iron pass through the already-mentioned posts, and completely fix the whole to the wall. It requires a very strong man even to lift the cover. To remove the chest is quite out of the question. Probably the treasures of the church were formerly kept here; now, what little remains in the shape of sacramental plate is kept at the rectory (Is this right?). The moth and the spider are the sole tenants of this fine old piece of antiquity.—I am, Sir, &c.,

17th Sept. 1846. A Subscriber.

THE SPRING IN KNIGHTSBRIDGE.

A few years ago the inhabitants of the east-end of Knightsbridge, as also the weary travelling pedestrians, were indulged with a supply of most excellent water, conveyed into a tank, on the road side, from the park, near the gates, opposite the Chinese exhibition. For the last four years, the supply of this most desirable spring has been cut off, by which the public has materially suffered, particularly as there is no pump within three-quarters of a mile of it. Perhaps Viscount Morpeth, who has so much consideration for the public good, may be pleased to give directions for the restoration of so desirable a boon. Observer.

Knightsbridge.

THE PICCADILLY PAVIOURS.

Sir,—I addressed you some time since respecting the immense inconvenience sustained by the neighbourhood and public, from the diversion of the road, through the tortuous narrow streets of May Fair, in consequence of the repairing of Piccadilly. I feared the erection of a well protected hovel, and a little house, indicated residence, and so it has proved, for there they are still, and there seems no disposition to quit; and there too are the eternal two men and a boy still dressing the paving stones, and the sprinkle of men pick, pick, picking at the macadamized road.

Now, Sir, all these men are at work at one side of the road: pray will you give the surveyor a hint, that if a similar number of men were employed in the same slow process on the opposite side of the street, the work might be done in just one-half the time; and it is the more important that it should be so, since, if you will take the trouble to walk up Down-street, Hertford-street, Chapel-street, and the devious course to arrive in Piccadilly, you will perceive that the pavements, which were never meant for such heavy and great traffic, are all giving way and being displaced; which must, if it continue much longer, be repaved, and cost the parish from 1,500*l.* to 2,000*l.* at the least, and this all from the sloth of work, a month having been already expended in making about a hundred yards of road, and that not yet completed.—I am, Sir, &c.,

A Rate-payer of St. George's, and an Inhabitant of May Fair.

17th Sept. 1846.

*** Since the above was in type, part of the road has been opened for traffic; our correspondent's first reproaches, reprinted by the daily press, having somewhat expedited matters.

USE OF ZINC IN INDIA.

Sir,—May I trespass upon your kindness to obtain for me some information upon one or two points detailed below. I have been applied to by a friend in India, to ascertain how far zinc or metal of any kind, is applicable to the roofing of buildings in that country, where the thermometer sometimes varies 100 degrees in the course of a few hours. Is zinc liable to such a degree of expansion as to render it likely that the plates would burst asunder? The tropical rains are very heavy, and for a public building, especially of a largish size, it is necessary to guard against leakage in the roof. Zinc is lighter than iron, I believe. How is it fastened?—copper or iron nails would produce a galvanic action, corroding the zinc. This metal is cheaper, moreover, than iron. Under the circumstances I have mentioned, would you recommend the use of zinc in roofs constructed with a very low pitch, with the principal woodwork of the roofs of wood; uprights of bolt iron, and covered with boarding underneath the metal? What are the comparative merits of zinc, iron, and galvanised iron in respect to roofing in tropical climates?

The building to be covered is 65 feet long, 45 feet wide, measured within the walls, with a Grecian portico. The pediment of a building in this style is necessarily low, and the roof must be managed accordingly.—I am, Sir, &c.,

L. L. L.

The Nelson Monument, Trafalgar-square.—This unlucky specimen of the 19th century taste and intelligence has shewn signs of returning animation during the last fortnight; some few blocks of granite, for which the contractor had been kept waiting much against his will, having been at last obtained. When the steps, and lions, and all, are to be really finished, we will not pretend to say; we hail the "movement," however, as "while there's life there's hope."

St. Mathias Church, Spitalfields.—It appears that the Rev. Joseph Brown, the incumbent of the new Protestant church in Brick-lane, Spitalfields, the foundation-stone of which was laid on Wednesday week, has himself originated the congregation for it, which at first comprised only three Communicants, but at length has filled to overflowing the chapel hitherto used.

London Mechanics' Institution.—Considerable improvements have been effected here under the direction of Mr. Davy; a new reading-room 38 feet long has been formed, and additional communications with the lecture theatre effected.

NOTICES OF CONTRACTS.

[We are compelled, by the interference of the Stamp Office, to omit the names of the parties to whom tenders, &c. are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent Garden.]

For the completion of the works of the Borough Gaol at Birmingham, and the supply of the necessary materials and labour for that purpose. Tenders received for the completion of the whole of the works, or for any portion thereof.

For the Stratford workshops for the Eastern Counties Railway—extension of time.

For supplying and laying cast-iron water-pipes, cocks, and other castings for the service of the waterworks at Plymouth.

For lighting the parish of St. Mary Rotherhithe with essential oil of tar for one year, from 13th October, at per lantern, the contractor finding, fitting, and repairing the lanterns.

For the supply of paving, flint, winstone, and Bombay granite, cartage, &c., for the year ending 29th September, 1847, for the district of St. George-the-Martyr.

For the building of sewers in Gun-square, &c., in the City.

For a supply of elm boards, 1 inch, ¾ inch, and full ½ inch thick, for the Birmingham workhouse.

For building lock-up cells and turnkey's residence, at Wooden Box, parish of Hartshorn, Derbyshire.

For the supply of 10,000 to 12,000 feet of two-and-a-half Yorkshire flag of best quality, for the parish of St. Mary Magdalene, Bermondsey.

For the execution of the whole of the works on that portion of the Glasgow, Dumfries, and Carlisle Railway, extending from Gretna to Dumfries,—a length of about 24 miles, to be divided into several contracts.

For the execution of the whole of the works on that portion of the Glasgow, Dumfries, and Carlisle Railway, extending from near Carron-hill to near Dalpeddar, in the neighbourhood of Thornhill,—a length of about 5 miles, in one contract, embracing the Drumlanrig tunnel, and the viaducts over the Carron and Entakine waters.

For the supply of 3,000 tons of the best black rock Bristol stone, to be delivered at Cheltenham, at per ton.

For the construction of a reservoir and filter beds near Hill-cliff, at the Warrington Water-works, including all earthwork, masonry, storing, diversions of roads and water-courses, &c., and the embankment of the reservoir, containing about 34,000 cubic yards of earthwork.

For lighting the public lamps in the district of Turnham-green, for three years, from 25th October next; the contractor to find, provide, and keep in repair, all columns, brackets, or wall-irons, with service-pipes, tubes, scroll-heads, stop-cocks and burners, lanterns, and glazing and repairing lanterns, and all other fittings complete, at per light per annum.

For building a bridge near Blaby.

For the execution of the works on the Nidd contract on the Leeds and Thirsk railway.

For the whole of the works to be done in erecting the new church at Flint.

For certain works in the building of a dwelling-house connected with the grammar-school at Durham.

For putting down two pits, about 100 fathoms each, near Bo'ness, Scotland.

For the several works required to be done in the formation of the lower reservoir at Skellingthorpe for the Lincoln Water-works.

For the execution of the whole works of a railway junction with the Arbroath and Forfar line, at Arbroath—extending a length of nearly a mile, with earthwork and bridges of considerable extent.

For 1,000 tons of cast-iron railway chairs, for the Edinburgh and Northern Railway.

For 30,000 railway sleepers of foreign timber, for the Edinburgh and Northern Railway.

For building the breakwater or eastern pier at Fraserburgh harbour (Scotland).

For the execution of the earthwork, masonry, fencing, &c., on the Whitehaven and Furness Junction Railway, from Whitehaven to near St. Bees,—a length of about 4½ miles.

For the execution of the earthwork and fencing of Leamill cutting, near St. Bees, on the Whitehaven and Furness Junction Railway,—containing 130,000 cubic yards, or thereabouts.

For the execution of the earthwork and fencing of Netherton Cutting, on the Whitehaven and Furness Junction Railway, containing 144,000 cubic yards or thereabouts.

For building 400 feet of sewer in Denmark-street, St. Giles's.

For building 350 feet of sewer in Thorney-street, Bloomsbury.

For building 640 feet of sewer in St. James's-street, St. James's.

For building 330 feet of sewer in Green-lane, Paddington, and under Paddington Canal, near Kensal New Town.

For building 205 feet of sewer in John-street, Berkeley-square.

For repairs and other works to the sewer in Hill-street, Berkeley-square.

For making and laying the Newry and Enniskillen Railway, from the field, No. 1, in Lisnisk, to the field, No. 3, in Drumennis, all in the county of Armagh, a length of about 9 miles, with all excavations, embankments, bridges, culverts, gates, fences, roads, &c., complete, and for keeping the whole in repair for one year; the contractor finding all materials except permanent rails, bolts, screws, chairs, tre-nails, and sleepers.

For making a sufficient quantity of turn-tables, wheels, axles, axle guards, springs, scroll irons, &c., for railway carriages and waggons for the Dublin and Belfast Junction, and Navan Branch Railway Company.

For the letting on lease of old-established workshops, &c., for a plumber, painter, and glazier, in town.

For the letting of an oil and colour shop, in town.

For a superintendent of works for puddling, making railway iron, forging, &c., at Philadelphia, America; salary, 1,000 to 1,200 dollars per annum.

For a constant supply of good operative painters and glaziers at Birmingham, when wanted.

For 300 to 400 able men, at Doncaster, accustomed to tool work.

For a gas manager for a town in Ireland: a liberal salary.

For the letting of a freestone quarry near Craigleith, Edinburgh.

For the letting of slate quarries in Perthshire.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

At Dean Forest, Gloucestershire: 25 lots of oak timber and cord wood.

At Blackwall: a stock of timber and iron.

At Saffron-Walden, Essex: 1,000 feet of ash plank, 1,000 feet of beech plank, &c.

At Ipswich: a large quantity of oak, elm, and fir slabs, &c.

At Mells: 60 lots of oak, ash, beech, and fir timber trees, &c.

At Glemsford, Suffolk: a carpenter's stock-in-trade.

At Birmingham: a number of logs of mahogany and of planks of rosewood, also 1,000 feet of walnut planking.

At Greenwich: a quantity of framing, sashes, doors, skylights, panelling, oak and fir timber, iron doors, three fire-engines with hose, &c.

At Pinner, Middlesex: the materials of three cottages and farm buildings, 200 felled oak, ash, and elm trees, and other useful timber, &c.

At Earith Suspension Bridge: a quantity of building materials, timber, &c.

At Luton: a brick field of 8 acres, &c.

At Leicester: an iron and brass foundry, machinery, and business.

At Devonport: a quantity of old government stores, comprising cast iron, ballast, &c.

At Leeds: a large stock of mahogany and rosewood veneers and planks.

At Sutton Cheney: 49 oak trees, felled in 1845, and 45 felled in 1846, in lots; also six lots of ash poles, &c.

At Derby: a stock of seasoned woods.

At Lambeth: the first portion of an extensive stock of timber, planks, iron, &c.

At Hampton: a new straight deal shop-front unglazed, 9½ feet long, and 7½ feet high, with facia and shutters complete.

At Liverpool: an excellent and complete mortar-mill, on the newest and best principle.

At Lincoln's-Inn-Fields: an old established ironmonger's business.

At Nottingham: a two horse-power steam-engine and boiler.

At a town near London: an ironmongery business.

At Ayton, near Eyemouth: a quantity of larch, spruce, and Scots fir, for railway fences, &c.

At Vincent-street, Old-street-road: the plant, implements, and lease of an iron-foundry.

At 60, Stones-end, Borough-road, Southwark: a stock of architectural ornaments, &c.

BY PRIVATE TENDER.

At Lathrisk, near Falkland, Fifeshire: a large quantity of larch, Scots fir, beech, ash, oak, &c.

At Bloomsbury: a country business in the window-glass, lead, and colour trades.

At Newington Causeway: steam saw-mills.

At 8, Dover-road, Borough: two 6-horse high-pressure steam-engines.

TO CORRESPONDENTS.

"*J. C.*"—All the modifications of the Buildings Act will be found in THE BUILDER, but we have not time to point out the pages.

"*Amicus.*"—The statement re "Jephson Gardens" should be authenticated.

"*Bow Pen*" will find articles on the conversion of areas in previous numbers of present volume.

"*T. W.*"—Apply at No. 4, Trafalgar-square, Charing Cross.

"*C. D.*"—The class of architecture will meet for the first time, Tuesday, 20th October. Write to the Professor, Bolton-gardens, Russell-square.

"*Public Necessaries.*"—We do not consider churchyards the most proper site.

"*H. A.*" shall hear from us.

The question put by a Correspondent, as to the name of the builder of the church at Mount St. Mary's, near Barlborough, Derbyshire, still remains unanswered.

Next week.—"Exchange of lands," "F. Tyrrell," and "C. G."

Received.—"Nemo," "T. Clowser," "S. B. S.," "Poor Subscriber," "A Practical Designer."

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

CHARGE FOR ADVERTISEMENTS IN "THE BUILDER."

	£.	s.	d.
For Sixty Words or less	0	5	0
Every additional Thirty Words	0	1	0
One Column	2	2	0
One entire Page	5	5	0

For a series of advertisements above 5s. a reduction will be made.

ADVERTISEMENTS.

TO BUILDERS, PAINTERS, DECORATORS, AND OTHERS.

MESSRS. WOOD AND COMPANY, Grainers and Writers to the Trade only, by contract, measure, or otherwise.
62, Waterloo Bridge-road. All letters post paid.
N.B. Workmen sent to any part of the kingdom.
*** An Apprentice wanted.

WILLIAMS'S PATENT SLATE RIDGES and HIPS.—The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 30 per cent. cheaper.—Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchant, Belvedere-road, Lambeth, London.

PEAKE'S TERRO-METALLIC TILES, PIPES, &c., of 100 sorts and sizes.—The Public is respectfully informed, that Mr. PEAKE has removed his Depot from Whitefriars to No. 4 WHARF, MACCLESFIELD-STREET South, City Basin, London, where a large Stock is on Sale of genuine Terro-Metallic Goods. No Agent. Roofing in Grecian and Italian styles, other devices also, or plain; ridges and hips, with plain or capped joints, roll tops, or vertical ornaments; paving, in 6 in. 7½ in. and 9 in. blue and red squares, in 6 in. blue and red hexagons, and in 8 in. blue octagons, with 3 in. drab squares. Drains, many sizes, with butt or socket joints; conduits, which will not injure pure water; tubular and other flues, of proper material; channels, large clinker bricks, and outdoor paving; sundry wall-coping, fire bricks and tiles, garden-edging, chimney tops, &c. The Tileries, Tunstall, Staffordshire, are near the centre of England, whence boats are sent to any inland place, or to the Mersey, for the coasts, the colonies, and elsewhere. A Wharf at Whitefriars to be let for a term.

THE PATENT UNIVERSAL GAS-BURNER. This valuable invention, superior to other burners in purity and brilliancy of light, and economy of consumption, has been tested and approved by the Institution of Civil Engineers, and various scientific persons; and is used nightly at the Polytechnic Institution. Also at the Manufacturers, HUXLEY, HERIOT, and Co., Castle-street, Long-acre,

TO ARCHITECTS, BUILDERS, &c.

GAS LAMPS, GAS BRACKETS, GAS PILLARS, BURNERS, &c. &c. In calling the attention of architects, builders, &c., to their assortment of Gas Furniture in general, C. DEBAUFER and SON respectfully announce they continue to fit up premises of every description on the most approved and newest system of gas fitting. An experience of forty years justifies us in making the above assertion.—P.S. Country orders attended to with dispatch.—10 and 11, Creed-lane, St. Paul's.

GAS.—From 40 to 60 PER CENT. SAVED.

CONTRACTS taken for Lighting Towns, Villages, Mansions, Mills, Factories, Railway Stations, Signal Lights, Dockyards, Lighthouses, Churches, Colleges, Hospitals, Theatres, Public Institutions, Prisons, Barracks, Asylums, Schools, Unions Poor-houses, Public Gardens, &c., with pure and brilliant GAS by FRANCIS' PATENT GAS LIGHT APPARATUS, either by rental or purchase.—Applications at the office and factory, 112, High Holborn, and Eagle-street, Red Lion Square, London, where the gas can be seen manufactured on the principle of this invention, from Ten till Four daily. Prospectuses and every information may be obtained.

FREEHOLD LAND.—TO BUILDING SOCIETIES, BUILDERS, AND OTHERS.

TO BE LET or SOLD, about SIX ACRES of FREEHOLD LAND, well adapted for the erection of small respectable dwellings, and situate within 100 yards of the Clapham-road, and a 6d. ride of the city. It will be sold in plots varying from 65 to 110 feet in depth, at from 50s. to 60s. per foot frontage, or be let for 99 years at from 2s. 6d. to 3s. per foot rental. Bricks will be advanced on security of the property, or sunk at a ground rent if required.—Apply to Mr. WILLIAM THOMAS WOODS, Bedford New-road, Clapham-rise.

LANDLORDS' and TENANTS' BUILDING and INVESTMENT SOCIETY, Established August, 1846, Pursuant to Act of Parliament, 6 & 7 William IV., c. 32. Shares, 120*l*. Monthly Subscription, 10s. per Share. Entrance Fee, 2s. 6d. per Share. No Redemption Fee.

Trustees:—William Naylor Morrison, Esq., Streatham Hill.
John King, Esq., College Hill, City, and Muswell Hill, Middlesex.
John Doulton, Esq., 28, High-street, Lambeth.
Chairman:—C. H. Lovell, Esq., M.D., 91, Blackfriars-road.
Solicitor:—Hull Terrell, Esq., 30, Basinghall-street.
Bankers:—London and Westminster Bank, Southwark Branch.
Manager:—Mr. William Lawley, 6, Red Lion-street, Borough.
Secretary:—Mr. James Sears, 17, Trafalgar-street, Walworth.

For List of Directors see Prospectus, which may be obtained on application to the Manager or Secretary, or will be sent by post, on receipt of a Postage Stamp for reply.

The Society consists of individuals who each take one or more Shares, paying a monthly subscription of 10s. per Share. The value of each Share is 120*l*., which it is calculated will be realized in twelve years. Members desirous of purchasing property, by allowing a suitable discount upon the ultimate value of their shares, have money advanced, upon mortgaging the property to the Society as security for the repayment of the monthly subscriptions till the termination of the Society, when the property becomes their own. The Rent received from the property the Member appropriates towards the Subscriptions. Members not requiring advances, upon the expiration of the Society receive 120*l*. for each Share.

Members withdrawing after the first year will receive 4 per cent. interest upon subscriptions paid after the 1st year in addition to the net Subscription money.

The first Monthly Subscription will be payable at the Southwark Literary Institution, Borough Road, on Friday, October 2nd, from half-past 6 till half-past 8 o'clock, and on Monday Evening, October 5th, at the Marylebone Literary Institution, 17, Edwards-street, Portman-square, from half-past 6 till half-past 8 o'clock.

Persons desirous of obtaining Shares at the present low entrance fee of 2s. 6d., should make immediate application to the Manager or Secretary, and remit by post, order or otherwise, the entrance fee and first monthly subscription on each Share.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 36, Chiswell-street, Finsbury-square, near Whitbread's Brewery

Best Patent Cut Clasp.

3d.	4d.	6d.	8d.	10d.	20d.
5d.	6d.	7d.	11d.	1s. 4d.	1s. 10d. per 1000.

Best Sheet Floor Brads 11s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch 52s. per cwt.
Best Patent Sash Line.

1	2	3	4	5	6
4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d. per inch.
Self-acting Kitchen Ranges with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

3 ft., 3*l*. 3s.	3 ft. 6 in., 3*l*. 12s. 6d.	4 ft., 4*l*.

Lists of Prices had on application at the Warehouse; if by letter prepaid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY & Co., WHOLESALE IRONMONGERS, and MANUFACTURERS of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen-Ranges, with back Boiler and Oven, and Wrought Bars:—

2 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
3*l*. 6s.	3*l*. 13s.	3*l*. 18s.	4*l*.	4*l*. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
5*l*.	5*l*. 15s.	6*l*. 5s.	6*l*. 18s.	7*l*.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 9½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises. BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton Garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above Office.

By the Court,
STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square.

TO BUILDERS and Others interested in buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by watercourses falling into the river Thames, between the city of London and the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. III. (chap. 7, local) it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses, or other premises, to ascertain whether such premises have separate and distinct drains into common sewers.

All petitions must be delivered at this office at least three clear days before they are presented to the commissioners; and all such petitions will be called on in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and their regulations made subservient to the purposes of the Act. The execution of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewers or drains within this commission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,
LEWIS C. HERTSLET, Clerk.

CHEAP PAN FOR WATER CLOSETS,
With Trap, in one Piece.

DOULTON and WATTS, Lambeth Pottery, London, Manufacturers of the above in superior glazed STONE WARE, price 7s. 6d. each. They are of the most durable ware, and are recommended in preference to iron on account of their cleanliness and cheapness. If preferred, they can be had in two parts, the pan at 4s. 6d., and the Trap at 3s. N.B. Manufacturers of RAIN-WATER PIPING for houses.

CHEAP ROMAN CEMENT is sold in Casks that will not contain five bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

PATENT METALLIC SAND CEMENT, requiring no colour or paint, and free from cracks and blisters, mixed ready for use at 8s. per cask; 2s. 6d. allowed for each cask returned in good order. 3½ bushels common sand to be added to each cask of Metallic Cement, which will float 14 square yards of stucco.—Apply at the Metallic Cement Wharf, King's-road, Camden New Town.

PORTLAND CEMENT does not vegetate in damp situations, requires no colouring, is perfectly hydraulic, and resists the action of frost. The price is now considerably reduced, and the public are thereby enabled to avail themselves of these distinct advantages.

Manufactured by J. B. WHITE and SONS, of Millbank-street, Westminster; and sold at their warehouses—Earl-street, Blackfriars; Druce's Wharf, Chelsea; Bell's Wharf, Paddington; and Albion Wharf, Deptford-bridge; at Seel-street, Liverpool; and Salmon and Co.'s, Dublin.

KEENE'S PATENT MARBLE CEMENT.

WITHOUT noticing CAUTIONS, which are as absurd as they are uncalled for, or disproving assertions, which carry with them their own refutation, the patentees of KEENE'S CEMENT venture to believe, that this material will very advantageously stand the test of comparison with any cement of a similar nature, however INVALUABLE, now before the public. They derive this opinion from its all but exclusive use in the new buildings north of Hyde-park, on the Brompton estate, and in many other public and private edifices, both in London and the country. Amongst others may be mentioned the works recently executed at the Colosseum, Regent's-park, where its hardness and beauty of appearance have caused it to be extensively used for skirting and other mouldings, in place of wood, for columns instead of marble, and as a substitute for stone in paving the floors of the corridors and conservatories.

Patentees and manufacturers, J. B. WHITE & SONS, Millbank-street, Westminster,

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves, that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and, being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of hall and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHNS and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known, to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHNS and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, produceable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

ATKINSON'S CEMENT.

Rotherhithe Cement Works, Church-street, Rotherhithe.

WILLIAM WOOD, Jun., Manufacturer of Bath, Portland, and Roman Cements, Blue and White Lias Lime, &c. &c., begs to inform Architects, Builders, and others, that he is appointed AGENT for the sale of ATKINSON'S CEMENT, and has just received a shipment direct from the Works, which is now ready for sale, in any quantity, at the price of 2s. 3d. per bushel.—WILLIAM WOOD, Jun., also begs to call the attention of the public to his Bath Cement, which he thinks will merit approbation. It is of a very light colour, and will take up more sand than any cement now in use; requires no paint, and is well adapted for ornamental castings of every description, however elaborate; 2s. per bushel, delivered free within three miles of the works.

ARBROATH and CAITHNESS FLAG PAVING STONES.—Stone Merchants, Contractors, Masons, and Builders, can be supplied with the above stones in natural, planed, and polished surfaces, in cargoes direct from the Quarries in Scotland, at first cost prices, delivered free from ship's side in River Thames, or free on board at ports of shipment in Scotland. Orders received by, and further information, with samples, may be obtained of Mr. ALEX. REID, 70, Lower Thames-street, London.

N.B. Cargoes shipped direct to any port.

CAEN STONE.

TUCKWELL'S Norway Sufferance Wharf, Greenwich.—Architects and Stone Merchants are informed, that this stone may be procured at the above Wharf in any quantity, in blocks up to 12 tons. The stone, which is exclusively the product of the Allemagne Quarries, and of the very finest quality, is consigned solely to W. TUCKWELL, who is prepared to execute orders to any extent, having a Large Stock always on the Wharf.—Orders received by, and further information with samples may be obtained of Mr. R. A. WITHALL, Surveyor, 60, Cheapside, and of Mr. W. TUCKWELL, at the Wharf.

N.B. Cargoes shipped direct to any Port.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects and others that every description of Stone, Marble, and Granite work is executed at the cheapest possible rate.

MARBLE WORK for Halls, Dairies, Tables, Columns, Vases, at most reasonable prices.

A large collection of Designs for Memorials, Crosses, Mural and other Monuments.

BOX CHIMNEY PIECES from Twelve Shillings upwards.

Depôt for Caen and other Stones.

N.B. Mason's Work in all its branches prepared at the works, ready for fixing to drawings and dimensions sent, and fixed if required, including York paving, squared jambs, mantles, sills, slate shelves, &c. &c.

BARRETT, STONE MERCHANT, 24, Wharf, Harrow Road, Paddington, respectfully informs Builders, Stone Masons, and others, that he has opened a Depôt at the Great Western Terminus for the sale of Wall's Quarry Stone. Having been established at the above place for the last twelve months, and the sale of the stone increasing so much, the Great Western Company has had the kindness to favour me with a Depôt at their Terminus. The Wall's Quarry Stone is equal to Portland for Staircases, Hall Floors, Porticoes, Balconies, Chimney-pieces, Coping, Window Sills, &c. The same stone being used in Gloucestershire for all the above purposes. The stone is sawn to all sizes while in the Quarry to save expense of waste and sawing in London, on which account can be rendered much cheaper, and is free from all flints, shells, and holes.—List of prices and samples sent to any part of London, carriage free, by directing all letters to No. 24, Wharf, Paddington.

P.S. Nailsworth and Paniswick Stone in Block.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen at 27s. 6d. per ton.

COMMISSIONERS OF FINE ARTS' REPORT ON THE MEANS OF PREVENTING DAMP IN WALLS.

THE DIRECTORS of the SEYSSEL ASPHALTE COMPANY have much pleasure in recommending to the notice of Architects, Builders, and others, the application of the ASPHALTE of SEYSSEL as the only effectual means of preventing DAMP rising in WALLS.

J. FARRELL, Secretary.

Seyssel Asphalte Company's Works,
"Claridge's Patent."
Stangate Depôt, London.

The following account of its application is extracted from "The Appendix to the Commissioners of Fine Arts' Report," page 18:—

"In 1839 I superintended the construction of a house of three stories on the Lac d'Enghien. The foundation of the house is constantly in water, about 19½ inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered, at the level of the internal ground-floor, with a layer of SEYSSEL ASPHALTE, less than half an inch thick, over which coarse sand was spread.

"Since the above date no trace of damp has shewn itself round the walls of the lower story, which are for the most part painted in oil of a gray stone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted, yet the pavement of the floor, resting on the soil itself, is only about 2½ inches above the external surface of the soil, and only 19½, at the utmost, above that of the sheet of water.

"The layer of Asphalte having been broken and removed, for the purpose of inserting the sills of two doors, spots indicating the presence of damp have been since remarked at the base of the door-posts."

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

ALWAYS ON SALE, a LARGE ASSORTMENT of DRY PREPARED FLOORING BOARDS and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¾ inch to 1¼ inch thick. Rough Boarding for Flats.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Smith-street, Westminster.

ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, and at Hy. Castle's, Ship-yard, Millbank-street, Westminster, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

DRUCE'S No. 2, WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weighbridge and draw-dock.—N.B.—Depot for Glass Pantiles.

T. ADAMS (from Byron and Co.), late S. Dare, Mahogany, Timber, and Deal Yard, New-road, Bermondsey, near Bricklayers' Arms, has always in stock mahogany, cedar, wainscot, elm, beech, oak, &c. Pantile oak and fir laths, scaffold poles, putlogs, &c. Wheelwright's goods, veneers, cut deals and scantling of every dimension. Also a large assortment of SEASONED FLOORING, MATCH BOARDING FIT FOR immediate use, and MOULDINGS prepared by machinery, all at reduced prices.

MUIR'S PATENT PLANING MACHINERY.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor-canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre. Price 16s. per gallon.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain, is the object of this process, which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London, in bottles of 6d. and 1s. each, and at 10s. per gallon. The oak colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.

N.B. The Trade supplied.

HENDRY and GLOVER, IRON-FOUNDERS, beg to inform their customers that they have removed their Foundry (from Smart's-buildings) to CHARLES-STREET and 168, DRURY-LANE, where they have adopted every improvement to enable them to compete successfully in quality, price, and punctuality. They have also an extensive and well-arranged stock of patterns for every description of Castings.

TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the continent, are stronger, lighter, cheaper, and more durable than brass or copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames-street.